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NYMNPA
16/02/2024

Date: 16 February 2024
Our ref: 50303/04/HS/JCx/29623918v1

Dear Rob

North York Moors: Ladycross Plantation - Application to Partially Discharge Conditions 4, 18, 34, 42, 52, 57, 59, 60, 65, 68, 70, 71, 76, 80, 81, 88, 89, 90, 91, 92, 93, 94 and 95 of Planning Permission NYM/2017/0505/MEIA

On behalf of our client, Anglo American Woodsmith Limited, we are pleased to submit this application for limited and partial approval of Planning Conditions 4, 18, 34, 42, 52, 55, 57, 59, 60, 65, 68, 70, 71, 76, 80, 81, 88, 89, 90, 91, 92, 93, 94 and 95 of Planning Permission NYM/2017/0505/MEIA.

The Project will be delivered in a series of Phases within each discrete part of the overall consented area. This application relates solely to Phase 9 works at Ladycross Plantation.

Background

On 19 October 2015, the NYMNPA granted planning permission for the *"Winning and working of polyhalite by underground methods including the construction of a minehead at Dove's Nest Farm involving access, maintenance and ventilation shafts, the landforming of associated spoil, the construction of buildings, access roads, car parking and helicopter landing site, attenuation ponds, landscaping, restoration and aftercare and associated works. In addition, the construction of an underground tunnel between Doves Nest Farm and land at Wilton that links to the mine below ground, comprising 1 no. shaft at Doves Nest Farm, 3 no. intermediate access shaft sites, each with associated landforming of associated spoil, the construction of buildings, access roads and car parking, landscaping, restoration and aftercare, and the construction of a tunnel portal at Wilton comprising buildings, landforming of spoil and associated works"* (Council Reference NYM/2014/0676/MEIA).

NYM/2014/0676/MEIA was approved subject to 95 planning conditions and a Section 106 Agreement.

On 6 February 2017, the NYMNPA granted planning permission for the *"Variation of Condition 5 of planning permission NYM/2014/0676/MEIA to allow minor material amendments relating to that part of the development at the Woodsmith Mine site (formerly known as Doves Nest Farm and Haxby*

Plantation), including; re-design of foreshafts and shaft construction methodology, changes to building layout and shaft access arrangements, revisions to construction and operational shaft platform levels, revisions to location and layout of surface water attenuation ponds, revisions to groundwater management arrangements and amendments to internal access arrangements" (Council Reference NYM/2017/0505/MEIA).

The amended scheme (NYM/2017/0505/MEIA) was approved subject to 98 planning conditions and a deed of variation to the originally approved Section 106 Agreement.

Phase 9 Works

The Phase 9 works comprise:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant

Partial Discharge

Anglo American acknowledges that limited and partial approval of Planning Conditions 4, 18, 34, 42, 52, 57, 59, 60, 65, 68, 70, 71, 76, 80, 81, 88, 89, 90, 91, 92, 93, 94 and 95 when given, does not constitute permission to undertake works other than those described, and that such works remain subject to the approval of other conditions.

This approach has been discussed and agreed with your Planning Team and is consistent with the approach taken at the Woodsmith Mine site.

Application Submission

The application was submitted via the planning portal on 16 February 2024 (reference PP-12791387) and comprises the following documentation:

- Completed application form;
- Application drawings – Please see Appendix 1;
- Supporting Documents – Please see Appendix 1.

The requisite planning application fee of £145 has been paid online by credit card.

Conclusion

We trust that this application provides you with the necessary information to be able to partially discharge the above conditions to cover Phase 9 site works at Ladycross Plantation. However, should you require any further information, please do not hesitate to contact me.

Yours sincerely

James Cox
Associate Director
BA (Hons) MA MRTPI

Annex 1: **Supporting Documents**

Table 1 Supporting Documents

Condition No	Description	Document Name / Number	Further Details
N/A	N/A	Listed Plans	40-STS-LC-2100-PA-22-20129– Ladycross Plantation Phase 9 General Arrangement 40-STS-LC-2100-PA-22-20127– Ladycross Plantation Phase 9 Phasing Plan
4	Phasing Plan	40-STS-LC-2100-PA-22-20127– Ladycross Plantation Phase 9 Phasing Plan	N/A
18	Noise & Vibration	Phase 9 Ladycross Plantation Noise and Vibration Management Plan - 40-STS-LC-2100-EN-PL-00042	N/A
34	Construction Traffic Management Plan	Phase 9 Ladycross Plantation Construction Traffic Management Plan - 40-STS-LC-2100-LG-PL-00011	N/A
42	Access	Refer to CEMP (Condition 93)	Access arrangements will remain as per earlier phases. Further details regarding the proposed parking, manoeuvring and turning areas that will be utilised in this phase are also set out in the Construction Method Statement and Listed Plans.
52	Protected Species Management Plan	Ladycross Plantation Phase 3 Protected Species Management Plan – Bats – 40-STS-LC-2100-EN-PL-00001 Ladycross Plantation Phase 3 Protected Species Management Plan – Breeding Birds – 40-STS-LC-2100-EN-PL-00002 Ladycross Plantation Phase 3 Protected Species Management Plan – Reptiles – 40-STS-LC-2100-EN-PL-00003 Ladycross Plantation Phase 3 Protected Species Management	Please also refer to the Phase 9 CEMP (Condition 93).

Condition No	Description	Document Name / Number	Further Details
		Plan – Badgers – 40-STS-LC-2100-EN-PL-00004 Ladycross Plantation Phase 3 Protected Species Management Plan – Water Voles – 40-STS-LC-2100-EN-PL-00005	
57	Landscape & Ecological Management Plan	Ladycross Plantation – Phase 3 Works – NYMNPA 57 Landscape & Ecological Management Plan– 40-STS-LC-2100-EN-PL-00014	The Phase 3 LEMP will remain applicable for the Phase 9 works.
59	External Lighting	Refer to CEMP (Condition 93)	N/A
60	Surface Water Drainage	40-STS-LC-2100-PA-22-20123– Ladycross Plantation Phase 7 Drainage Layout Ladycross Plantation – Phase 3 Works – NYMNPA 60 and 80 Surface Water Drainage Scheme – 40-STS-LC-2100-PA-PL-20102	The Phase 7 drainage layout and Phase 3 Surface Water Drainage Scheme remain applicable to the Phase 9 works.
65	Temporary Fencing	Refer to Construction Method Statement (Condition 94)	Please also refer to CEMP (Condition 93).
68	Temporary Structures	Refer to Construction Method Statement (Condition 94)	Please also refer to CEMP (Condition 93).
70	Arboricultural Method Statement	Ladycross Plantation Phase 3 Arboricultural Method Statement – 40-STS-LC-2100-CN-MS-00003	Please also refer to CEMP (Condition 93).
71	Hard & Soft Landscaping	40-STS-LC-2100-PA-22-20128– Ladycross Plantation Phase 9 Hard and Soft Landscaping Plan	N/A
76	Soil Management Plan	Ladycross Plantation – Phase 3 Works – NYMNPA 76 Soil Management Plan – 40-STS-LC-2100-EN-PL-00007	The Phase 3 Soil Management Plan will remain applicable for the Phase 9 works.
80	Surface Water Drainage	40-STS-LC-2100-PA-22-20123– Ladycross Plantation Phase 7 Drainage Layout Ladycross Plantation – Phase 3 Works – NYMNPA 60 and 80 Surface Water Drainage Scheme – 40-STS-LC-2100-PA-PL-20102	See Condition 60 above

Condition No	Description	Document Name / Number	Further Details
81	Wastewater Management Scheme	Refer to CEMP (Condition 93)	Whilst a non-domestic water treatment plant is not required at the site, details of waste water management can be found in Section 11 of the CEMP.
88	Hydrogeological Risk Assessment	Ladycross Plantation – Phase 8 Works – NYMNPA Condition 88 & 90 Hydrogeological Risk Assessment – 40-STS-LC-2100-EN-RA-00005	The Phase 8 Hydrogeological Risk Assessment remains applicable to the Phase 9 works.
88	Ground Water & Surface Water Monitoring Scheme	Ladycross Plantation – Phase 8 Works – NYMNPA Condition 88 Construction & Operation Groundwater & Surface Water Monitoring Scheme – 40-STS-LC-2100-EN-PL-00037	The Phase 8 Hydrogeological Risk Assessment remains applicable to the Phase 9 works.
89	Remedial Action Plan	Ladycross Plantation – Phase 8 Works – Remedial Action Plan – 40-STS-LC-2100-EN-PL-00044	The Phase 8 Remedial Action Plan remains applicable to the Phase 9 works.
90	Groundwater Management Scheme	Ladycross Plantation – Phase 8 Works – NYMNPA Condition 88 & 90 Hydrogeological Risk Assessment – 40-STS-LC-2100-EN-RA-00005	The Phase 8 Hydrogeological Risk Assessment remains applicable to the Phase 9 works.
91	Emissions	Phase 9 Ladycross Plantation Emissions to Atmosphere - 40-STS-LC-2100-EN-PL-00043	N/A
92	CVPMP	Phase 9 Ladycross Plantation Construction Vehicle & Plant Management Plan - 40-STS-LC-2100-LG-PL-00012	N/A
93	CEMP	Phase 9 Ladycross Plantation Construction Environmental Management Plan – 40-STS-LC-2100-EN-PL-00040	N/A
94	Construction Method Statement	Phase 9 Ladycross Plantation Construction Method Statement – 40-STS-LC-2100-CN-MS-00010	Listed plans.
95	Written Scheme of Investigation	Refer to CEMP (Condition 93)	40-COT-LC-8324-EN-PL-00002 – Ladycross Plantation - Written Scheme of

Condition No	Description	Document Name / Number	Further Details
			Investigation for an Archaeological Watching Brief – Phase 2

NYMNPA

16/02/2024

WOODSMITH PROJECT

(788.5030)

CONSTRUCTION METHOD STATEMENT – PHASE 9 – LADYCROSS PLANTATION / 40-STS-LC-2100-CN-MS-00010

Revision	Date of issue	Prepared by	Checked by	Approved by	Changes
C (PLA)	15/02/2024	JA	CT	CE	

TABLE OF CONTENTS

1. INTRODUCTION

1.1. OVERVIEW

This document has been prepared on behalf of Anglo American and details the Construction Method Statement for the Phase 9 construction activity at Ladycross Intermediate Shaft Site

Anglo American are constructing a Mineral Transport System (MTS) tunnel, as part of the wider Woodsmith Project. The tunnel will be used to transport Polyhalite from the Woodsmith Mine site to the Material Handling Facility (MHF) at Wilton, Teesside. Safe and efficient construction and operation of the tunnel requires the construction of an intermediate shaft at Ladycross to provide access to the tunnel.

This document builds on the previous Construction Method Statements (CMS) for the previous phases of works.

This report only details the construction works required for the Phase 9 works at Ladycross.

The CMS provides an overview of the resource requirements, the plant and materials that are anticipated to be used during the Phase 9 construction works at Ladycross. It includes the measures to be taken to ensure that the works are carried out in accordance with the requirements of both the planning permission and of Anglo American and, above all, are carried out safely and in compliance with all statutory obligations.

In addition, while not submitted to the Planning Authority, all site works are controlled by a Risk Assessment and Method Statement (RAMS) process, which identify the resources, plant, materials and specific controls required for all scopes of work.

The Phase 9 Scope of Works is as follows:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant; and
- Installation and operation of Mines Rescue Facility.

A site plan is provided separately.

Table 1 - 1 Condition NYMNPA-94: Construction Method Statement

NYMNPA 94 Compliance	Compliance
Prior to the commencement of each phase of the development at Dove's Nest Farm or Ladycross Plantation in accordance with the approved Phasing Plan, a Construction Method Statement shall be submitted for that phase, and approved in writing by the MPA, in consultation with the appropriate Highway Authority. Each approved Statement shall be adhered to throughout the construction period. The Statements shall provide for:	**Phase 9 Construction Method Statement**
(i) The parking of vehicles of site operatives and visitors clear of the highway;	**Section 2.3** **Phase 9 Construction Traffic Management Plan**
(ii) Loading and unloading of plant and materials;	**Section 2.5** **Phase 9 Construction Traffic Management Plan**
(iii) Storage of plant and materials used in constructing the development;	**Section 2.6**
(iv) Erection and maintenance of security fencing;	This type of work is not required in Phase 9
(v) Wheel washing facilities;	**Section 2.9**
(vi) An outline construction method for sub-surface works including adherence to the 'rack and pillar' method of mining described in the SEI (14th February 2015) and the SRK Subsidence Memorandum (15th May 2013);	This type of work is not required in Phase 9
(vii) Buildings and structures associated with the mine and tunnel shafts;	**Section 3**

NYMNPA 94 Compliance	Compliance
(viii) Welfare/office building and security gatehouse;	**Section 2.2**
(ix) Screening bunds;	**Phase 9 Noise Vibration Management Plan**
(x) Hardstandings;	**Section 3.4**
(xi) Shuttle Bus terminal;	**Phase 9 Construction Traffic Management Plan**
(xii) Park-and-Ride layby;	This type of work is not required in Phase 9
(xiii) Emergency helipad;	This type of work is not required in Phase 9
(xiv) Lighting columns;	**Section 2.8** **Phase 9 Construction Environment Management Plan**
(xv) Internal access and haul roads;	**Section 2.7**
(xvi) Domestic wastewater (foul sewage) treatment plant;	**Section 2.10**
(xvii) Non-domestic wastewater treatment plant and settlement tanks;	**Section 2.10**
(xviii) Surface water attenuation ponds, settlement ponds, swales and wetland areas;	**Phase 3 Surface Water Management Plan** and **Phase 3 Surface Water Drainage Scheme**
(xix) Temporary spoil and Polyhalite storage areas;	This type of work is not required in Phase 9
(xx) Removal of any temporary structures; and	**Section 3.3**

NYMNPA 94 Compliance	Compliance
(xxi) Formation of spoil mounds and the establishment of vegetation on them.	**Phase 9 Construction Environment Management Plan**
The CMS shall contain a construction timetable and order of works noting any construction dependencies, refer to any inherent mitigation measures required to address adverse impacts identified in the EIA and cross refer to the CEMP in relation to any additional avoidance or mitigation measures	**Phase 9 Construction Environment Management Plan**

The CMS is a live document and updates to this CMS plan will be prepared for subsequent construction phases and following any design or method change. The NYMNPA has confirmed that it supports this approach.

2. DESCRIPTION OF WORKS

2.1. PHASE 9 WORKS

The Phase 9 Scope of Works is as follows:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways; and
- Operation of grout plant.
- Installation and operation of Mines Rescue Facility.

The scope of works covered by this document comprises the construction and use of the Adit connection to the Mineral Transport System (MTS) Shaft, which will connect the shaft and tunnel upon arrival of the Tunnel Boring Machine (TBM) to the Ladycross Site.

Tunnel boring support works are included in the Phase 9 Scope of Works for the Ladycross Site, as the MTS Tunnel progresses towards, through and beyond the Site. This includes the access and egress of personnel from surface to the MTS tunnel using the Ladycross Shaft via the headhouse.

An additional walkway is to be installed from the main site welfare building to the grout plant location, as per the General Arrangement Plan (40-STS-LC-2100-PA-22-20129). This will provide segregated access to the Grout Plant as well as the Ladycross Shaft/Headhouse via the Tally Hut, as per the General Arrangement Plan.

The Phase 9 Scope of Works also covers the operation of the grout plant, to provide retarded grout to the Tunnel Boring Machine from the Ladycross Plantation Site for the remainder of the tunnel drive to the Woodsmith Mine. See **Section 3.8 Grout Plant Operation** for further details.

A Mines Rescue Facility will be installed to the north of the new welfare to support emergency response for tunnelling activities from Ladycross. See **Section 3.9 Mines Rescue Team Facility** for further details.

2.2. LAYDOWN AREAS

The laydown area and workshops constructed during Phase 3 works will be utilised for general laydown of materials and day to day small mechanical tasks. The immediate area surrounding the Phase 9 working areas will be demarcated using pedestrian barriers and classified as a ‘restricted access area’ where only authorised personnel involved in the operation can gain unescorted access. See General Arrangement (40-STS-LC-2100-PA-22-20129).

2.2.1. PRE-COMMENCEMENT WORKS

Prior to the commencement of the Adit Construction and TBM works the area will be suitably prepared and segregated. The area to be used for the works is graded with imported stone, through the use of an excavator dumper and roller to provide a working surface.

Surface water from the work area will flow into the existing site drainage system.

2.3. CAR PARKING

All site personnel will continue to use the car parking facilities established during the Phase 3 works and revised under Phase 7 works. Parking will only be permitted within designated car parking areas. No entrance to the site by foot is permitted. A peak of up to 50 employees per shift are expected on site during the Phase 9 works. During a shift change over period (up to one hour per day), a maximum of 100 people may be present at the Ladycross Site. As stated in Section 2.5.5, mass transport such as car sharing, and mini-bus services will be utilised to ensure parking is limited to the spaces set out in the Phase 9 Construction Traffic Management Plan (CTMP).

2.4. MOBILISATION

All equipment, plant and materials will be delivered to site using the approved traffic routes as per the Phase 9 CTMP.

All HGVs and abnormal loads will drive directly to site and will not stop / wait on the public highway.

2.5. TRAFFIC AND PEOPLE

2.5.1. TRAFFIC MANAGEMENT

Condition 34 requires that a Construction Traffic Management Plan (CTMP) is to be prepared and submitted to NYMNPA prior to each phase of construction, for detailed traffic information please see the Phase 9 CTMP. Additional information for Traffic Management is also detailed in the Phase 9 Construction Environment Management Plan (CEMP).

2.5.2. PUBLIC PEDESTRIAN MANAGEMENT

Pedestrian management is to be controlled via both site security fencing and site access gate security; this is to be situated at the entrance to the main site haul road. Perimeter fencing along the site boundary was installed as part of Phase 2 works with improved site security facilities installed as part of Phase 5 works.

2.5.3. ACCESS

All construction traffic will use the existing main internal road to access the site. The access road is appropriately sized to allow for three HGVs to queue.

In addition to the physical measures proposed, to prevent traffic having to wait on the highway or the potential for multiple to meet at the site access, the contractor will be required to provide a banksman and schedule deliveries and shift times.

Security will be stationed at the site access gates and all drivers will be required to have completed the appropriate driver induction before entering site. Access will only be authorised for deliveries / vehicles booked in for the day and with the appropriate access documentation. All deliveries will follow the onsite one-way traffic controls. Where required a banksman will be provided by the contractor if reversing or manoeuvring of vehicles is required.

In addition to assisting the contractor to manage the total numbers of daily HGV movements, the requirement for planning and scheduling deliveries will also assist the contractor in ensuring that deliveries can be spread throughout the working day.

The contractor will also be required to schedule shift times to try and avoid employees arriving and departing at the same time and to schedule deliveries outside of these hours.

2.5.4. LOADING AND UNLOADING

Loading and unloading of deliveries and materials on site will take place in designated areas dependent on works.

2.5.5. TRANSPORT HUB AND MASS TRANSPORT

If practical, car parks outside of the North York Moors National Park will be encouraged as a transport hub for shift workers travelling to Ladycross. Other potential locations will be explored to reduce parking at the Ladycross Site where practicable.

Car sharing and minibuses will be promoted to limit the numbers of people driving / parking at Ladycross to remain within the committed numbers stated in the Phase 9 CTMP.

2.6. STORAGE OF PLANT AND MATERIALS

Materials will be stored in demarcated zones dependant on material use. Working Platforms will be utilised for storage of bulk materials and material deliveries will be managed to reduce overall site storage requirements. Materials will also be stored in designated areas as close to the works as possible.

All storage areas will be located on hardstanding appropriate to the plant and materials away from sensitive receptors. All COSHH and fuel will be stored in line with requirements and practices outlined in the Phase 9 CEMP.

2.7. Internal Access Routes

Haul roads and internal access routes within the Phase 9 works scope will be demarcated and separated from pedestrian areas as per previous phases. All HGV and delivery vehicles will follow the internal one-way system route. Speed limits will be enforced as per the site limits.

2.8. Lighting Columns

As part of the Phase 9 works additional temporary lighting columns / fixed lighting will be installed on new structures for emergency use and safe access / egress in the area. Where additional temporary lighting is required to provide a safe working area and access and egress, it will be installed in line with the procedures detailed in the Phase 9 CEMP, where possible aiming to limit upward light spill, and utilising warm spectrum LED's.

2.9. Wheel wash

Vehicles entering site will stay on hardstanding already installed during Phase 3 works. No plant will travel off site other than specialised plant moving transport. All HGV's and plant exiting site will use the approved wheel washing facilities described in the approved Phase 3 CMS.

2.10. Water Management

2.10.1. Surface Water Management

The Water Treatment Plant (WTP) along with finalised attenuation pond and drainage network set up as part of the Phase 3 works will be utilised to manage site surface water as indicated in the Phase 3 Surface Water Management Plan (40-STS-LC-2100-PA-PL-20102)

2.11. Process Water Management

All controls and mitigation for process water will be carried out in accordance with the controls outlined in the Phase 9 CEMP.

2.11.1. Foul Water Management

The foul sewerage from the welfare, offices and security cabin will be stored in appropriate cesspit installed during the Phase 3 works. During Phase 7 works a new cesspit is to be installed to accommodate additional welfare facilities. Foul sewerage will be removed by a licensed contractor to a permitted waste facility.

2.12. Hours of Operation

Phase 9 operations will be 24hrs 7 Days per week.

3. CONSTRUCTION METHOD STATEMENTS

3.1. WORKING PLATFORM

Working platforms for the grout plant are designed to withstand the loadings of all plant and equipment associated with the Phase 9 Grout Plant operation.

3.2. POWER REQUIREMENTS

A three-phased 415V electrical supply was installed during Phase 4 to power site operations. Where practical the main supply will power the Phase 9 activities.

It is anticipated that the following generators will be in use during Phase 9 works.

- 250 kVA generator. Already installed. Emergency back-up generator (Welfare).
- 60 kVA generator. To be installed. Back-up power to the water treatment plant (Siltbuster).
- 4 kVA mobile generator. Already available. To power water management activities.

3.3. EXTERNAL TEMPORARY STRUCTURES

As part of the Phase 9 Scope of Works, various external structures and ancillaries will be installed in preparation for grout plant operation and shaft access. Further details are provided below alongside the Phase 9 CEMP and General Arrangement Drawing.

3.3.1. TRENCHES AND WALKWAYS

A new walkway is to be constructed upon existing hardstanding, previously disturbed ground which will provide walking access from the site welfare/office building to the Ladycross Shaft and Grout Plant, via the Tally Hut (see General Arrangement Drawing).

As part of the Phase 9 Scope of Works, service trenches will be installed for electrical connections to facilitate the use of the new welfare and car park as approved in Phase 7. This work will involve the excavation of previously disturbed hardstanding ground on the site.

3.3.2. BLACKTOP SURFACES

An area of non-permeable hard standing (blacktop) will be constructed around the northern and eastern perimeters of the grout plant. This will provide a more suitable, longer term surface for regular vehicle access (deliveries, maintenance etc.) to the grout plant. This also reduces the requirement for surface maintenance and reduces dust emissions from this specific area.

3.4. HARDSTANDING AREAS

In addition to the blacktop approved under Phase 7 for the welfare car park and grout plant, blacktop will be installed in areas as shown in the Phase 9 Phasing Plan (40-STS-LC-2100-PA-22-20127). The additional areas of blacktop to be installed are located west of the Workshop, for the purpose of improved access to the newly installed cesspit.

3.5. UTILITIES

3.5.1. WATER SUPPLY

Raw water to will be serviced by a 4" Yorkshire Water potable water supply. The potable water will provide services to both welfare facilities and for site process use.

Bottled water dispensers will be provided for site staff. Where required, dust suppression bowsers will also periodically be topped up via the water supply.

3.6. ADIT CONSTRUCTION

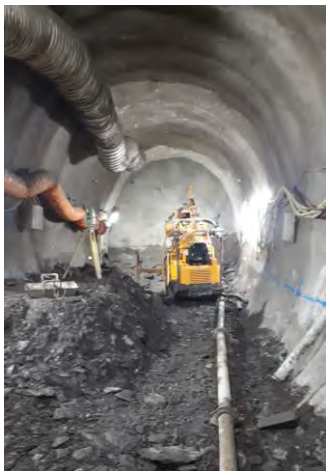
A connection from the Tunnel to the Ladycross Plantation Shaft will be constructed following the TBM advance beyond the shaft. Tunnel segments will be removed from the MTS Tunnel to create the Adit opening, from which probe drilling will take place to assess ground conditions prior to excavation.

Excavation of the Adit will advance from the tunnel and intersect the base of the Ladycross shaft utilising excavation plant provided from the tunnel. This excavated material will be removed and transported to the tunnel portal via the tunnel.

The excavation will be supported using sprayed concrete on the excavation walls, followed by rock anchors.

Permanent steel support frames will then be installed to the tunnel and shaft openings before installation of cast in-situ concrete for further support of the openings and Adit base.

Image 3-1: Adit Connection from MTS Tunnel to Lockwood Beck Shaft



3.7. TUNNEL BORING MACHINE OPERATION

The tunnel boring machine (TBM) will stop approximately 750m beyond the Ladycross Plantation Shaft to undergo essential maintenance, after which it will continue its advance towards the Woodsmith Mine site.

3.8. GROUT PLANT OPERATION

To seal the tunnel segments into position, grout is pumped behind the tunnel rings, forming a seal between the ground and the tunnel extrados. This phase of construction involves the operation of a Grout Plant (installation approved in Phase 6) at the Ladycross Plantation Site, to produce the grout required for this seal. Grout supply for the tunnel is currently being supplied from the Lockwood Beck Intermediate Shaft. However, due to limitations in the distance that the grout can be pumped, the extent between Ladycross and Woodsmith requires grout to be pumped from Ladycross.

A grout mix with retarder will be produced in the Mixer Plant. From there it will be pumped to the Tunnel utilising the Ladycross Shaft and Adit, where it will be combined with a grout accelerator and pumped behind the tunnel rings to create the seal.

The grout plant mixer units will be washed out using clean water which is then flushed through the waste water system (filter press) to remove the solid content. The water will then be fed down the Ladycross Shaft and pumped on a return water line, through the MTS Tunnel, to the Wilton Site for final treatment and discharge.

Image 3-2: Lockwood Beck Grout Plant and Filter Press


3.9. MINES RESCUE FACILITY

A Mines Rescue Facility will be installed to the north of the new welfare. This will be modular units, single stacked, double row, with a planned footprint area of approximately 67m². these units will not exceed 3.5m height and will be lifted into place by a site mobile crane or HIAB. The units will be painted RAL6008 (brown/green) or equivalent prior to arrival on site. Discreet, sensor controlled perimeter downlighting will be fitted to provide safe access and egress. All windows will be fitted with shutters.

4. PLANT & EQUIPMENT

All proposed plant and equipment to be used during the Phase 9 works are detailed in **Table 4-1**. Details of each main scope activity plant has been provided with proposed plant models where the information is available. The models of plant may change closer to the time of the works based upon supply and final design requirements.

Table 4-1 Plant use for the Phase 9 works

Description	Model	Loading when operational
General Site use		
12T Excavator	Hitachi ZX135US-7	25.00%
20T Dumper	Bell B20E	25.00%
Telehandler	Manitou MT1840	50.00%
Road Sweeper	DAF or similar	50.00%
45ft MEWP	Artic Boom SJ63AJ	10.00%
Flat bed	Ford transit dropside single cab	50.00%
Construction and use of Adit Connection to the MTS Shaft		
All activities underground		
Operation of TBM Works and Associated Headhouse		
Alimak	Alimak SE 1000 FC	50.00%
Emergency Winch		10.00%
Ventilation Fan	Korfmann GAL8	100.00%
Installation of Service Trenches and Walkways		
Tracked Excavator 20T	Hitachi ZX225USRLC	70%
Roller Vibrator	HAMMM BW120	20.00%
Dumper Truck 20T	Bell B20E	60.00%

Telehandler 5T	Manitou MT1840	50.00%
Tracked Excavator 20T	Hitachi ZX225USRLC	20.00%
Roller Vibrator	HAMMM BW120	20.00%
Dumper Truck 20T	Bell B20E	50.00%
24/7 Operation of Grout Plant		
Mixer Unit		75.00%
Agitator		75.00%
Air Compressor L290	CompAir L290RS	75.00%
Grout pump		75.00%
Filter press	2 presses per shift (4 per 24 hours)	75.00%
Surface Works – Blacktop Installation		
Dozer	CAT D6	20.00%
Roller Vibrator	HAMMM BW120	20.00%
Asphalt Paver	CAT AP300	50.00%
Asphalt Roller	BW 120 AD-5	50.00%
Skid Steer	Bobcat M3 Series	60.00%
Tracked Excavator 20T	Hitachi ZX225USRLC	50.00%

5. HAZARDOUS MATERIALS AND SUBSTANCES

The following hazardous materials are foreseen to be used during the construction activities listed within this document. This list may not be exhaustive, individual Risk Assessment and Method Statements will identify the hazardous materials and a specific COSHH Assessment will be included within the Safe System of Work (SSOW) documentation.

- Concrete / Cement
- Grout
- Diesel
- Petrol
- Oils and Greases (Plant Maintenance)
- Bentonite
- Accelerator

6. RELATED DOCUMENTS AND REFERENCES

GENERAL ARRANGEMENT - PHASE 9 – LADYCROSS - 40-STS-LC-2100-CN-22-90101

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN - PHASE 9 - CONDITION 93 – LADYCROSS - 40-STS-LC-2100-EN-PL-00040

CONSTRUCTION TRAFFIC MANAGEMENT PLAN - PHASE 9 - NYMNPA CONDITION 34 (ROYAL HASKONINGDHV) – LADYCROSS - 40-STS-LC-2100-LG-PL-00011

NOISE & VIBRATION MANAGEMENT PLAN - PHASE 9 - NYMNPA CONDITION 18 (ROYAL HASKONINGDHV) - LADYCROSS - 40-STS-LC-2100-EN-PL-00042

CONSTRUCTION VEHICLE & PLANT MANAGEMENT PLAN - PHASE 9 - NYMNPA CONDITION 92 (ROYAL HASKONINGDHV) – LADYCROSS - 40-STS-LC-2100-LG-PL-00012

EMISSIONS TO ATMOSPHERE - PHASE 9 - NYMNPA CONDITION 91 (ROYAL HASKONINGDHV) – LADYCROSS - 40-STS-LC-2100-EN-PL-00043

PHASING PLAN – PHASE 9 – LADYCROSS – 40-STS-LC-2100-PA-22-20127

7. DEFINITIONS AND ABBREVIATIONS

CMS – Construction Method Statement

RAMS – Risk Assessment and Method Statement

MPA – Mineral Planning Authority

EIA – Environment Impact Assessment

NYMNPA – North York Moors National Park Authority

AIL – Abnormal Indivisible Load

CTMP – Construction Traffic Management Plan

HGV – Heavy Goods Vehicle

COSHH – Control of Substances Hazardous to Health

WTP – Water Treatment Plant

CEMP – Construction Environment Management Plan

MTS – Mineral Transport System

NYMNPA

16/02/2024

WOODSMITH PROJECT

(788.5030)

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN – PHASE 9 – LADYCROSS PLANTATION / 40-STS-LC-2100-EN-PL-00040

Revision	Date of issue	Prepared by	Checked by	Approved by	Changes
C (PLA)	15/02/2024	JA	CT	CE	

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TABLE OF CONTENTS

1. INTRODUCTION

1.1. PURPOSE OF THE DOCUMENT

In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to the North York Moors National Park Authority (NYMNPA) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning permission was subsequently granted in 2015 subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA.

Anglo American is constructing a Mineral Transport System (MTS) tunnel, as part of the wider Woodsmith Project. The tunnel will be used to transport polyhalite from the Woodsmith Mine site to the Material Handling Facility (MHF) at Wilton, Teesside. Safe and efficient construction and operation of the tunnel requires the construction of a shaft at Ladycross Intermediate Shaft Site (Ladycross) to provide access to the tunnel.

This Construction Environmental Management Plan (CEMP) has been prepared on behalf of Anglo American for the Phase 9 Works at Ladycross (as described in **Section 1.2** below).

This CEMP has been prepared to discharge condition 93. Subsequent CEMPs will be prepared for future phases of works. This CEMP covers work carried out in Phase 9.

Table 1 - 1 Condition NYMNPA-93: Construction Environment Management Plan

NYMNPA-93 Description	Compliance with Condition NYMNPA 93
Prior to the commencement of each Phase of Construction in accordance with the approved Phasing plan at either Doves Nest Farm or Lady Cross Plantation, an updated CEMP shall be based on the approved Construction Method Statement (CMS) and should be submitted and approved in writing by the MPA in consultation with the Environment Agency in respect of the area concerned.	This version of the CEMP is for Phase 9 as defined in **Section 1.2** below. Earlier versions of the CEMP were produced for preceding works.
The size, location and design of any site compounds, including how any potentially polluting materials will be stored to minimise the risk of pollution	**Section 3** and **Section 11** **Phase 9 Construction Method Statement**
An incident Response Plan to deal with any pollution that may occur during the course of construction;	**Section 12**

NYMNPA-93 Description	Compliance with Condition NYMNPA 93
A protocol to deal with contaminated ground, should this be encountered, to ensure protection of water resources;	**Section 10**
Details of how surface water run-off shall be passed through a settlement facility of settlement facilities prior to being discharged into any watercourse or soakaway;	**Section 9.1**
Plant and wheel washing including that it shall only be carried out in a designated area of hard standing at least 10 metres from any watercourse or surface water drain and that washings shall be collected in a sump, with settled solids removed regularly and water recycled and reused where possible;	**Section 3.10**
A scheme for the recycling/disposing of waste resulting from demolition and construction works;	**Section 11**
Storage of waste not covered by the Mine Waste Directive;	**Section 11**
Measures to control glare from in-site lighting;	**Section 3.6**
Measures to manage deliveries by HGV including routing and timing for deliveries and details of the penalty system for breaches of the agreed control;	**Section 4**
Temporary Traffic Management	**Section 4**
The provision of a Dust Management Plan relating to Phase 1 of the construction period (earthworks and bund formation) and Polyhalite handling and stockpiling to include dust generation modelling so as to identify	**Section 6** **Phase 9 Emissions to Atmosphere** **Construction Phase Dust Management Plan**

NYMNPA-93 Description	Compliance with Condition NYMNPA 93
sensitive receptors; likely dust generation and its disposition during the construction Phases and operation over time and under different weather conditions; the avoidance and mitigation measures required to ensure dust deposition levels at the sensitive receptors are maintained at the residual levels identified in the approved EIA, and monitoring arrangements. The Dust Management Plan must comply with the criteria set out in the 'Dust and Air Emission Mitigation Measures' best practice guidance for control of dust on construction sites from the Institute of Air Quality Management 2012. The monitoring arrangements will include dust deposition or dust flux or real-time PM_{10} continuous monitoring locations; baseline dust monitoring at least three months before construction commences; daily on-site and off-site inspections at monitoring locations with results recorded in a log to be made available to the MPA on request, and more frequent monitoring during periods of high dust generation;	
In the event that there is insufficient clay with the Ladycross Plantation site to form 1m deep basal layer beneath the spoil storage area, a contingency plan to address the importation of clay, including the source, quality of such material, and how adverse effects on the water environmental would be avoided;	**Not relevant to this Phase.**
How the requirements of the approved CEMP will be disseminated to all relevant staff/contractors throughout the construction period;	**Section 2.2**

NYMNPA-93 Description	Compliance with Condition NYMNPA 93
The location of the site notice board;	**Section 2**
A scheme for parking, loading, unloading during construction;	**Section 4** **Phase 9 Construction Traffic Management Plan**
A scheme for security and lighting during construction;	**Section 3.1** and **3.6**
A protocol for the replenishment of tanks and containers, including that all refuelling of vehicles, generators, plant and equipment shall be supervised and shall take place within a suitable bunded, impervious hardstanding;	**Section 3.8**
Contingency proposals for if fuel cannot be delivered for the generators, e.g. due to adverse weather;	**Section 3.8**
Proposals / contingency plans for waste not managed as part of the Mine Waste Permit comprising the storage and management of temporary mining waste stored on-site for less than three years (e.g. Pyritic Mudstone); non-inert and non-hazardous materials stored for less than one year, and unexpected hazardous waste stored for less than six months, including measures to prevent the dispersal of dust, leachate and surface water run-off;	**Section 11**
Precautionary Method of Working for Site Clearance (PMWSP) which shall be submitted to and agreed in writing by the MPA prior to commencement of Preparatory Works and shall be adhered to thereafter. The PMWSP shall set out proposals for tree clearance and the demolition of structures and shall include	**Section 7** **Attachment B** – Precautionary Method of Working

NYMNPA-93 Description	Compliance with Condition NYMNPA 93
that between March and September each year surveys of areas to be cleared should occur no less than 48 hours before clearance occurs so that occupied wild bird nests can be identified and prevented from being destroyed;	
Alarms fitted to mobile plant and vehicles for the purposes of warning pedestrians of their movements;	**Section 5**

Additional conditions addressed in this CEMP are detailed in **Table 1 - 2**.

Table 1 – 2 Additional relevant conditions

Condition	Topic	Compliance with Condition
NYMNPA-18	Noise and Vibration Management	**Section 5** **Phase 9 Noise and Vibration Management Plan**
NYMNPA-34	Construction Traffic Management	**Section 4** **Phase 9 Construction Traffic Management Plan**
NYMNPA-42	Access Arrangements	**Section 3** **Previous Phase 2 Construction Environment Management Plan and Phase 9 Construction Method Statement**
NYMNPA-52	Protected Species	**Section 7.1** **Phase 3 Protected Species Management Plans**
NYMNPA-57	Landscape and Ecological Management	**Section 7.3** **Phase 3 Landscape and Ecological Management Plan**
NYMNPA-59	External Lighting	**Section 3.6**

Condition	Topic	Compliance with Condition
NYMNPA-65	Temporary boundary treatments	**Section 3**
NYMNPA-68	Temporary Structures	**Section 3** **Phase 9 Construction Method Statement**
NYMNPA-70	Vegetation retained & clearance	**Section 7.2** **Construction Phase Arboricultural Method Statement**
NYMNPA-76	Soil Management Plan	**Section 10** **Phase 3 Soil Management Plan**
NYMNPA-81	Wastewater Management Scheme	**Section 11**
NYMNPA-88	Hydrogeological Risk Assessment	**Section 9** **Phase 8 Hydrogeological Risk Assessment**
NYMNPA-90	Groundwater Management	**Section 9**
NYMNPA-92	Plant and Vehicle Management	**Section 4** **Phase 9 Construction Vehicle and Plant Management Plan**
NYMNPA-95	Written scheme of Archaeological Investigation	**Section 8** **Phase 2 Written Scheme of Investigation for an Archaeological Watching Brief**

This document details only the additional activities required for Phase 9 at Ladycross associated with the Anglo American Woodsmith Project. Updates to this plan will be prepared for subsequent phases and following any design or method changes. The NYMNPA, as well as the Environment Agency and Natural England agreed that they support this approach in meetings held in April 2016.

1.2. Scope of Works

The Phase 9 Scope of Works is as follows:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant; and
- Installation and operation of Mines Rescue Facility.

The scope of works covered by this document comprises the construction and use of the Adit connection to the Mineral Transport System (MTS) Shaft, which will connect the shaft and tunnel upon arrival of the Tunnel Boring Machine (TBM) to the Ladycross Site.

Tunnel boring support works are included in the Phase 9 Scope of Works for the Ladycross Site, as the MTS Tunnel progresses towards, through and beyond the Site. This includes the access and egress of personnel from surface to the MTS tunnel via the headhouse.

An additional walkway is to be installed from the main site welfare building to the grout plant location, as per the General Arrangement Plan (40-STS-LC-2100-PA-22-20129). This will provide segregated access to the Grout Plant as well as the Ladycross Shaft/Headhouse via the Tally Hut, as per the General Arrangement Plan.

The Phase 9 Scope of Works also covers the operation of the grout plant, to provide retarded grout to the Tunnel Boring Machine from the Ladycross Plantation Site for the remainder of the tunnel drive to the Woodsmith Mine.

A Mines Rescue Facility will be installed to the north of the new welfare to support emergency response for tunnelling activities from Ladycross.

1.3. Scope of this Document

This CEMP details how the Phase 9 works will be planned, monitored and managed in an environmentally responsible manner. The document outlines the management framework for the environmental requirements, commitments, and performance targets associated with the planning and implementation of Phase 9 of the project.

The CEMP refers to several management plans, which have been prepared to discharge a number of planning conditions. Collectively these plans incorporate all mitigation measures relevant to Phase 9.

The Phase 9 CEMP should also be read together with the documentation listed below. Information in these documents is summarised in this CEMP where appropriate:

- Phase 9 Construction Vehicle & Plant Management Plan (40-STS-LC-2100-LG-PL-00012)

- Phase 9 Construction Traffic Management Plan (40-STS-LC-2100-LG-PL-00011)
- Phase 9 Noise & Vibration Management Plan (40-STS-LC-2100-EN-PL-00042)
- Phase 3 Landscape and Ecological Management Plan (40-STS-LC-2100-EN-PL-00014)
- Phase 9 Emissions to Atmosphere (40-STS-LC-2100-EN-PL-00043)
- Phase 3 Surface Water Management Plan (40-STS-LC-2100-PA-PL-20102)
- Phase 9 Construction Method Statement (40-STS-LC-2100-CN-MS-00010)
- Phase 8 Remedial Action Plan (40-STS-LC-2100-EN-PL-00044)
- Phase 2 Archaeological Watching Brief Written Scheme of Investigation (40-COT-LC-8324-EN-PL-00002)
- Phase 3 Soil Management Plan (40-STS-LC-2100-EN-PL-00007)
- Phase 8 Hydrogeological Risk Assessment (40-STS-LC-2100-EN-RA-00005)
- Phase 7 Surface Water Drainage Scheme (40-STS-LC-2100-PA-22-20123)
- Construction Phase Dust Management Plan (40-STS-LC-2100-EN-PL-00015)
- Construction Phase Arboricultural Method Statement (40-STS-LC-21-CN-MS-00003)
- Phase 8 Construction and Operation Groundwater and Surface Water Monitoring Scheme (40-STS-LC-2100-EN-PL-00037)
- Phase 9 Phasing Plan (40-STS-LC-2100-PA-22-20127)
- Phase 9 Hard & Soft Landscaping (40-STS-LC-2100-PA-22-20128)
- Phase 9 General Arrangement (40-STS-LC-2100-PA-22-20129)

This CEMP will remain a live document, being reviewed and updated in consultation with the appointed contractor(s) or sub-contractor(s) as required. Each of these updated CEMPs will be submitted to NYMNPA for approval prior to the start of each phase of works.

2. ENVIRONMENTAL MANAGEMENT FRAMEWORK

2.1. STRUCTURE OF RESPONSIBILITIES

This CEMP addresses those environmental matters within the responsibility of Anglo American and the Contractors engaged on its behalf to deliver the Phase 9 construction works. While overall responsibility for compliance with environmental requirements will remain with Anglo American, the Contractors working on site are accountable for undertaking the works in line with the requirements of this CEMP as well as all legal and other requirements imposed via permits and licenses.

2.2. TRAINING, AWARENESS AND COMPETENCE

2.2.1. *INTERNAL COMMUNICATION*

All staff and sub-contractors working on site will be required to attend a site induction prior to commencing work. This will cover the key environmental aspects relating to the project and the roles and responsibilities of individuals.

Toolbox talks will be undertaken by the Environmental Manager or other nominated personnel throughout the project. The aim will be to communicate information to all staff and serve to educate, prompt and remind them of their responsibility to protect the environment during works.

Monthly progress reports will be used to disseminate the results of monitoring and audit reports. These reports will include a review of the environmental performance throughout the site to date will be undertaken, and any improvements required during the Phase 9 works will be identified. Details of where sustainable approaches to works activities have been implemented or developed as the work proceeds will also be discussed and recorded. Their suitability for implementation at other areas of the site will be considered and applied where appropriate. Decisions about amendments required to the processes and procedures will also be agreed.

2.2.2. *EXTERNAL COMMUNICATIONS*

Anglo American will lead communication with members of the public, including adjacent landowners, local residents and businesses in line with the Community Stakeholder and Engagement Framework (CSEF) see **Attachment A**.

The CSEF includes provision for a quarterly Liaison Group Forum meeting, which are open to members of the public to attend.

2.3. MONITORING OF COMPLIANCE

All Phase 9 construction works will be supervised by the Contractor's managerial staff with the support of members of their teams on a daily basis. The Contractor's managerial staff will receive a briefing from the Contractor's Environmental Manager to ensure that they are aware of the environmental requirements. The briefing will also ensure that they are able to assess whether the environmental requirements are being implemented properly.

Procedures relating to environmental management and monitoring of environmental performance identified within the CEMP will be subject to inspections by the Contractor at least once every week, with oversight and audit by the Anglo American Environmental Team. Records of inspections, audits and overall environmental performance will be submitted to Anglo American.

2.4. COMPLAINTS PROCEDURE

The implementation of the systems and procedures to protect the environment will effectively reduce or remove the risk of an environmental incident and/or exceedance of established thresholds. However, complaints may still be received and in this event the Complaints Procedure will be implemented, as detailed in the Community Stakeholder and Engagement Framework (CSEF) see **Attachment A**.

3. DESCRIPTION OF SITE

The following section seeks to address the requirements of planning conditions 65 and 68, providing details for the site's temporary boundary treatments, temporary compounds and structures that will be used as part of Phase 9 works. Most of the site set-up will have been completed as part of the previous phases of works. Only small changes will be made to the existing site set-up as detailed in the below sections.

3.1. FENCING AND SECURITY OF THE SITE

Perimeter fencing will be installed around the Phase 9 works area as a demarcation zone. Site access and controls established in previous phases will be utilised for site access and security during the Phase 9 works. Further controls for site access are detailed in the Phase 9 CMS.

3.2. SITE LAYOUT AND COMPOUNDS

The site layout and compounds are detailed in the Phase 9 Ladycross Plantation General Arrangement Plan and the Phase 9 Construction Method Statement (CMS).

The working platform built during Phase 3 works was designed and constructed to withstand the loadings of part of the plant and equipment associated with the Phase 9 works. The laydown area adjacent to the cuttings pit/muck bin area will be concreted according to Phase 6 scope of works, also the hardstanding area around the grout plant will be resurfaced with the installation of blacktop. More details are shown in the Phase 9 CMS.

3.3. AREAS OF HARDSTANDING

3.3.1. *BLACKTOP SURFACES*

In addition to the blacktop approved as part of Phase 7 for the welfare car park, blacktop will be installed in areas as shown in the Phase 9 General Arrangement (40-STS-LC-2100-PA-22-20129). The additional areas of blacktop to be installed are located around part of the grout plant perimeter and west of the workshop, for the purpose of improved access to the newly installed cesspit.

3.4. External Temporary Structures

As part of the Phase 9 scope of works a Mines Rescue Facility will be installed to the north of the new welfare. See the Phase 9 Construction Method Statement (40-STS-LC-2100-CN-MS-00010) for further details. All other external temporary structures are included in previous phases of work (Phase 6 and Phase 7 CMS and CEMP).

3.5. Utilities

3.5.1. *Water Supply*

Raw water to facilitate Phase 9 works will be serviced by a 4" Yorkshire Water potable water supply. The potable water will provide services to both welfare facilities and for site process use.

Bottled water dispensers will be provided for site staff. Where required, dust suppression bowsers will also periodically be topped up via the water supply. Temporary tanks may be utilised for storage of water for site specific operations.

3.5.2. *Electrical Supply*

A three-phased 415V electrical supply was installed during Phase 4 to power site operations. Where practical the main supply will power the Phase 9 activities.

It is anticipated that the following generators will be in use during Phase 9 works.

- 250 kVA generator. Already installed. Emergency back-up generator (Welfare).
- 60 kVA generator. To be installed. Back-up power to the water treatment plant (Siltbuster).
- 4 kVA mobile generator. Already available. To power water management activities.

Further details are supplied in the Phase 9 Emissions to Atmosphere. Practices to reduce noise impacts will include but not be limited to:

- Procurement of super silent generators with reduced noise impact,
- Positioning of generators during installation, and
- Noise attenuation fencing/panels installed around generators, where required.

3.6. WELFARE FACILITIES

New welfare facilities approved in Phase 7 are due to be installed in the north-western part of site. It is expected that the new welfare will be installed prior to commencement of Phase 9 works.

A Mines Rescue Facility is to be installed to the north of the new welfare. More details regarding dimensions and installation are provided in the Phase 9 Construction Method Statement (40-STS-LC-2100-CN-MS-00010).

3.7. LIGHTING

The Phase 9 works will be illuminated, when necessary, through temporary, task-specific directional lighting. The shaft area will be fitted with discreet lighting for safe access and egress. Shutters on welfare buildings will be shut after nightfall to reduce light spill. Construction activities (surface works) associated to Phase 9 works will be undertaken only from 07:00 to 19:00. Operation of the site to support tunnel boring, including operation of the headhouse and the gout plant will be on a 24/7 basis.

On-site exterior lighting will apply the following principles which will ensure that impacts on wildlife are minimised in accordance with 'Artificial Lighting and Wildlife' guidance:

- Task lighting will be used where appropriate,
- Lighting will be directed downwards (0 to 20 degrees where possible), with all beam angles below 70°,
- Lighting will be kept as low as is safe and practicable for the works taking place and kept at a maximum height of 4m,
- Lights will be switched off when not in use or will be motion sensor controlled,
- Where safe and practicable, British Standards and guidance from the Institute of Lighting Professionals in the document 'Bats and Artificial Lighting in the UK' (September 2018) (https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/) will be followed where relevant, and
- All lighting will be directed to avoid light spill on to the perimeter woodland.

Where additional temporary lighting is required to provide a safe working area and access and egress, it will be installed in line with the above procedures, where possible aiming to limit upward light spill, and utilising warm spectrum LED's.

3.8. MATERIAL STORAGE

The type of material stored on site will determine the storage methodology adopted. Fuel and chemical storage areas will be located as far from all open drains and watercourses as practicable, with at least 10m from these locations. In addition, the storage areas will not be located near any open excavation of natural ground. Additional storage requirements will be implemented based upon the associated manufacturers Material Safety Data Sheet (MSDS).

The areas in which hazardous substances are stored will be clearly demarcated and within appropriate containerised units with integrated secondary containment.

All fuel will be stored within the onsite fuel tank installed during Phase 3 works. Specific areas on site will be designated for materials storage.

All non-polluting materials will be stored in designated areas, with surface water run-off draining to adjacent filter drains, surface swales and surface water drainage as detailed in **Section 10**. Penstocks and hydraulic brakes have been installed within the surface water drainage network, which will be closed in the event of a spill or detection of other contaminants. Details of site drainage and penstock locations are detailed in the Phase 3 Surface Water Management Plan and Phase 7 Surface Water Drainage Scheme.

Table 3 - 1 Material storage for Phase 9 works.

Material	How it will be stored
Concrete (Wagon / truck loads)	Bulk concrete will be delivered and used straight from the concrete wagon.
Cement (small bags 25kg)	Small bags of cement will be stored on pallets with appropriate weatherproofing in a designated area away from high trafficked zones.
Spray Paint (750ml pressurised cylindrical can)	Spray paint will be stored in appropriate containers in segregated areas of site (COSHH container).
Cement (60 tonne silo)	Silos installed as part of Phase 6 works will be used to store cement and are installed with appropriate secondary containment.
Bentonite (60 tonne silo)	Silos installed as part of Phase 6 works will be used to store bentonite and are installed with appropriate secondary containment.

Material	How it will be stored
Oils and greases (Plant maintenance and site operations)	Oils and greases will be stored in appropriate containers in segregated areas of site (COSHH container and workshops). COSHH assessment and MSDS will be assessed for further storage requirements.
Asphalt	Bulk asphalt will be delivered and used straight from the asphalt wagon.
Chemicals	Chemicals will be stored within appropriate container within the on-site COSHH containers.

3.9. Fuel Oil Storage and Refuelling on Site

3.9.1. *Storage*

Fuel will be stored within/on the refuelling area provided as part of Phase 3 works, it will be stored in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001, as follows:

Secondary containment will be provided for all surface oil and diesel tanks:

- For a single tank, the secondary containment will be at least 110% of the maximum storage capacity; and
- For two or more tanks in one secondary containment system, the secondary containment will be at least 110% of the biggest tank's maximum storage capacity or 25% of the total maximum storage capacity of all the tanks, whichever is the greater.

Storage must be more than 10m away from any watercourse or the surface drainage system. Static fuel tanks (such as those linked to generators) will be sited on sealed, level ground adjacent to the generators. All fuel bowsers will have tanks with integrated secondary containment that holds a minimum of 110% of the volume of the inner tank.

Spill kits will be stored adjacent to the storage areas and relevant staff will be trained in the use of such equipment in the event that spillages occur.

3.9.2. *Refuelling*

All replenishment of tanks and containers and all re-fuelling of vehicles, plant and equipment shall take place within bunded, impervious hardstanding where practical. The refuelling area built

during Phase 3 works will be utilised to refuel all site mobile plant. A double bunded tank will be used for the storage of diesel and a further bunded IBC unit will be used to contain AdBlue. Toolbox talks regarding refuelling processes will be briefed to all relevant personnel.

For larger or stationary plant such as the drilling rig, pumps and generators, refuelling will be carried out in-situ on site. The following control measures will be implemented during refuelling processes:

- Supervision of all fuel deliveries;
- Checks carried out on delivery of fuels to ensure correct fuel is delivered;
- Ensure all valves on a bunded tank or secondary containment is closed when not in use;
- Any static fuel bowsers are fitted with automatic cut-off or trigger nozzles; and
- Never leave vehicle or plant unattended during refuelling.

Heavy plant undergoing in-situ refuelling will be located on the drill pad area.

3.10. SITE HOUSEKEEPING

The implementation of a good site housekeeping policy is key to reducing the likelihood of accidents and environmental pollution incidents. Good housekeeping measures that will be implemented on site include:

- Keeping the site tidy;
- Segregating waste and removing it from site regularly;
- Maintaining all site facilities, including welfare facilities;
- Maintaining site roads, ensuring internal roads and those surrounding the site are kept clean;
- Ensuring plant and vehicles on site are well maintained;
- Ensuring all materials are stored appropriately;
- Undertaking regular inspections of all areas of the site to ensure housekeeping requirements are being fully implemented; and
- Ensuring that detailed records of these inspections, their findings and any mitigation required are kept.

The Site Supervisor will monitor the cleanliness of the road daily to ensure that it is free of dirt and debris. Road sweepers will be deployed to clean the roads as necessary, under instruction of the Site Supervisor/Manager.

3.11. WHEEL WASHING FACILITIES

The wheel washing facilities constructed as part of Phase 3 works will be utilised for wheel cleaning of all HGVs and plant exiting site onto the public highways. Traffic will be routed one way to ensure all vehicles required use the wheel washing facilities.

Regular maintenance of the wheel washing facility will be carried out in accordance with the manufacturers servicing specification. The washings shall be collected in a sump, with settled solids removed regularly and water recycled and reused where possible.

4. TRAFFIC

4.1. CONSTRUCTION TRAFFIC MANAGEMENT PLAN

The Phase 9 Construction Traffic Management Plan (CTMP) (40-STS-LC-2100-LG-PL-00011) outlines control measures implemented for the Phase 9 works. This contains a range of general measures for the management of transport including:

- High occupancy travel for employees, including car-sharing, minibus pick up and utilising a parking area outside of the NYMNPA as a transport hub, and
- All vehicles travelling to site using the designated routes only.

The CTMP also contains a Highway Communication Plan, which outlines how communication with the public, the planning and local authorities, and any other stakeholders will be undertaken.

The CTMP also specifies prohibited routes for construction vehicles. To support this, Prohibitive and Directional Signage will be shared with all delivery drivers. This signage was installed prior to the commencement of Phase 2 of the project as part of the Phase 1 Highway works and will be maintained throughout the activity period for Phase 9.

4.2. PARKING, LOADING AND UNLOADING

4.2.1. *PARKING AND LOADING*

4.2.1.1 PARKING

Parking will only be permitted within designated car parking areas. All site personnel will continue to use the car parking facilities established during the Phase 3 works and revised under Phase 7 works. No access to the site by foot is permitted. A peak of up to 50 employees per shift are expected on site during the Phase 9 works. During a shift change over period (up to one hour per day), a maximum of 100 people may be present at the Ladycross Site. Mass transport such as car sharing, and mini-bus services will be utilised to ensure parking is limited to the spaces set out in the Phase 9 Construction Traffic Management Plan (CTMP).

4.2.1.2 LOADING AND UNLOADING

Loading and unloading of deliveries and materials on site will take place in designated areas dependent on works.

Approximately 10 Abnormal Indivisible Loads (AIL) are expected during the Phase 9 works. Deliveries will be staggered throughout the duration of the Phase 9 works to reduce the number of AIL operating on the A171 and Egton Road between Lockwood Beck Site and Ladycross.

4.2.2. *Access*

All construction traffic will use the existing main access road to access site. The access road is appropriately sized to allow for three HGVs to queue. In addition to the physical measures proposed, to prevent traffic having to wait on the highway or the potential for multiple to meet at the site access, the contractor will be required to provide a banksman and schedule deliveries and shift times.

Security will be stationed at the site access gates and all drivers will be required to have completed the appropriate driver induction before entering site. Access will only be authorised for deliveries / vehicles booked in for the day and with the appropriate access documentation. All deliveries will follow the onsite one-way traffic controls. Where required a banksman will be provided by the contractor if reversing or manoeuvring of vehicles is required.

In addition to assisting the contractor to manage the total numbers of daily HGV movements, the requirement for planning and scheduling deliveries will also assist the contractor in ensuring that deliveries can be spread throughout the working day.

The contractor will also be required to schedule shift times to try and avoid employees arriving and departing at the same time and to schedule deliveries outside of these hours.

5. NOISE AND VIBRATION

5.1. NOISE AND VIBRATION MANAGEMENT PLAN

The imposed noise limits for the Ladycross Plantation are 55dB $LAeq^{-1}hr$ during the day and 42dB $LAeq^{-1}hr$ in the evening (07:00-19:00 and 19:00-07:00 respectively). The Phase 9 works will comply with these limits. Noise monitoring will be carried out for the full duration of the Phase 9 works. A Phase 9 Noise and Vibration Management Plan (NVMP) (40-STS-LC-2100-EN-PL-00042) has been produced and provides further details regarding the mitigation, monitoring and controls to be implemented during the Phase 9 works.

6. AIR QUALITY AND DUST MANAGEMENT PLAN

During the Phase 9 works dust suppression measures will include:

- Damping down of road surfaces, road sweeping and potentially vehicle wheel washing will be utilised across the works area, as appropriate,
- Site fencing, barriers and other areas of dust accumulation will be kept clean using water spraying where there is the risk of dust accumulation. Any run-off will be filtered via the site surface water drainage system,
- Materials that have the potential to create dust problems will be removed unless they are to be re-used on site. Where possible these will be covered or contained in a fenced area,
- Seeding of all topsoil and subsoil bunds,
- Burning of waste materials will be prohibited, and
- Plant and vehicles used on site will be well maintained to minimise pollutant emissions.

6.1. DUST MANAGEMENT PLAN

Measures and controls to minimise dust emissions from Phase 9 are provided in the Construction Phase Dust Management Plan (DMP) submitted as part of Phase 3 to partially discharge condition 93. Daily inspections and monitoring will be undertaken by the contractors, in accordance with this procedure. Some of the dust management mitigation identified in the DMP is detailed in **Table 6-1** below. The Phase 9 Emissions to Atmosphere and Phase 9 CTMP provides further detail regarding the air quality and dust mitigation to be adopted during the Phase 9 works.

Table 6 - 1 Dust Mitigation

Source / Activity	Mitigation Measures
Construction Traffic	• Implement speed limit on internal roads • Dust suppression used on roads when dust emissions noted • Provide wheel washes to reduce dust on public highways • Sheeting of vehicles carrying dust generating materials • Regular maintenance of vehicles and plant

Source / Activity	Mitigation Measures
Compound Areas	• Ensure areas used for welfare facilities and vehicle management (loading and unloading) are constructed of hardstanding • Sweeping / dampening down areas of hardstanding when required
Storage Areas	• Grass seeding temporary earth bunds until re-use • Profiling stockpiles of dust generating materials • Covering dust generating materials, if practical • Dampening down facilities for stockpiles
Tunnelling operations (Grout Plant)	• Dust suppression in areas of noted emissions • Background dust monitoring to assess impacts • Covering dust generating materials, if practical • Regular maintenance of vehicles and plant • Sweeping / dampening down areas of hardstanding when required

7. NATURE CONSERVATION

7.1. PROTECTED SPECIES AND PRECAUTIONARY METHOD OF WORKING FOR SITE CLEARANCE

Protected Species Management Plans (PSMPs) were produced for reptiles, birds, bats, badgers and water voles to partially discharge condition NYMNPA-52 for Phase 3. These remain applicable for the Phase 9 works, and the accompanying Precautionary Methods of Working will be applied. The measures detailed in these PSMPs will be implemented in Phase 9.

7.2. VEGETATION CLEARANCE

An assessment by competent persons and consultation with the Project Ecologist will determine if any works impact on the peripheral tree line. Appropriate measures will be followed as outlined in the Arboricultural Method Statement (AMS) prior to any works commencing.

In the event trees require removal, pre-commencement checks for protected species will be carried out 48 hours prior to felling works. Further checks will be undertaken at three-day intervals while works are ongoing to ensure nesting birds have not returned.

7.3. LANDSCAPING AND ECOLOGICAL MANAGEMENT

A Landscape and Ecological Management Plan (LEMP) was produced during Phase 3 works to partially discharge condition NYMNPA-70. Construction works and operations to support tunnel boring within the Phase 9 works requires no variation to the Phase 3 LEMP.

8. ARCHAEOLOGY

According to the Phase 9 scope of works the potential for interaction with archaeology is negligible since the areas of the site where work will take place have already been surveyed. The principles set out in the Phase 2 Written Scheme of Investigation (WSI) will be applied to archaeology encountered during the Phase 9 works.

9. HYDROGEOLOGY, WATER QUALITY AND DRAINAGE

9.1. SURFACE WATER MANAGEMENT

As part of the Phase 9 works the full site surface water drainage network installed during the Phase 3 and Phase 7 works will be adopted for surface water management on site. The scope of works for Phase 9 has been reviewed and it was concluded that no revision is required to the existing Phase 3 Surface Water Management Plan (SWMP) which provides further detail regarding the control measures and mitigation which will adopted during the Phase 9 works. Surface water will be managed in accordance with the Phase 7 Surface Water Drainage Scheme.

While surface water runoff is captured by the oil interceptor installed as part of Phase 3 works, additional mitigation controls such as installation of supplementary containment when managing chemicals, wastewater and fuel may be implemented around the working areas to segregate potential polluted surface water runoff if necessary.

9.2. GROUNDWATER MANAGEMENT

The following section seeks to address the requirements of planning conditions 88 and 90, providing details for managing shallow groundwater during the Phase 9 works.

Groundwater will be managed under the Phase 8 Hydrogeological Risk Assessment and the Phase 8 Construction and Operation Groundwater and Surface Water Monitoring Scheme. Location of monitoring points is provided in the Phase 8 (HRA). The frequency of the monitoring is stated in the approved Phase 8 Construction and Operation Groundwater and Surface Water Monitoring Scheme.

Any short term ingress water from either shallow groundwater or surface water sources will be managed by pumping. Water will be pumped into the site drainage network and managed in accordance with the Water Abstraction and Impounding (Exemptions) Regulations 2017 and the Phase 7 Surface Water Drainage Scheme.

Remedial actions will be in accordance with the Phase 8 Remedial Action Plan (RAP) 40-STS-LC-2100-EN-PL-00044.

9.3. SILT AND POLLUTANT MANAGEMENT

Silt and pollutant management remain as per the Phase 3 SWMP.

10. SOILS AND CONTAMINATED LAND

As part of the Phase 9 works, there is no requirement to excavate topsoil or subsoil on site.

10.1. CONTAMINATED LAND

It is not anticipated that any contaminated land would be encountered during the Phase 9 Works. Should contaminated land or ground that appears to be contaminated be discovered then works will stop. Any spoil removed will be kept separate. Chemical testing will be carried out to determine the classification and waste status. A conceptual model and risk assessment will be carried out to ensure protection of water courses as detailed in the “Environment Agency Managing and reducing land contamination: guiding principles (GPLC)”.

The processes by which contaminated land is identified and investigated are outlined in the “Environment Agency Land Contamination Risk Management (LCRM) document” (which is recognised as current best practice), CIRIA C552 - Contaminated Land Risk Assessment – A Guide to Good Practice, 2001 and BS 10175:2011+A2:2017- Investigation of potentially contaminated sites – Code of practice.

11. MATERIALS AND WASTE

A range of materials and waste materials will be stored on site, and these will be stored in a designated area on site. The areas used for storage of material have been planned to avoid excessive handling of material and to facilitate loading and unloading. Details of the measures taken to reduce potential pollution are detailed in **Sections 11.1 – 11.4**.

11.1. Waste Minimisation

Waste management practices will ensure that the waste will be managed in accordance with the Environmental Protection Act 1990 Part II: (Duty of Care); The Waste (England & Wales) Regulations 2011: and the Environmental Permitting (England & Wales) Regulations 2016 Waste Duty of Care requirements are met.

The national hierarchy for waste will be used as reference for management of all wastes produced on site:

Reduce: we will seek to minimise waste through design

Re-use: Wherever possible we will utilise waste exemptions to enable waste to be re-used both on and off-site.

Recycle: We will recycle material wherever technically, environmentally and economically practicable.

Recover: We will look to recover energy and material from waste (digestion, incineration, gasification etc.)

Dispose: We will look to avoid the disposal of waste to landfill and only use disposal as a last resort. Wastes will be minimised through adoption of the following procedures:

- Appropriate procurement of materials (volumes, and options to use recycled materials);
- Use of 'Just in Time' delivery of raw materials to ensure that raw materials (aggregate etc.) are not wasted or lost to the environment;
- Operation of a take-back scheme for excess materials when possible; and
- Adoption of energy management practices minimising use of plant and fuels.

11.2. MATERIALS AND WASTE STORAGE

Details of generic materials and waste stored on site are provided in the Phase 3 CEMP and are applicable for Phase 9.

Additional storage measures for materials used in Phase 9 not covered by previous CEMPs are detailed in **Section 3.8**.

11.3. Waste Grout Management

Waste grout produced during batching plant operations will be initially discharged to the on-site weir pit and/ or agitated tank. The solids from the waste grout will be removed by a dedicated unit (filter press). The dirty water separated from the solids stream will be discharged down the shaft and into the tunnel wastewater line. All materials will be removed from site by a licensed waste carrier and disposed of under an appropriate permit at a licensed disposal site.

All waste material will be managed within the confines of the grout plant slab within the waste management facility area. Solid concrete/grout waste will be removed from the grout plant slab and stored in bunded cells on an impermeable surface before being removed from site for recycling or disposal. If required, cement (or similar) will be added to the waste grout to solidify further and ensure the material is transportable.

11.4. Liquid Waste Material

11.4.1. *Wastewater from the Grout Plant*

Alkaline water will be pumped into the waste management facility area located on the grout plant concrete slab and waste pit. This will be treated to a quality that can be recirculated into the grout plant system. A rigorous maintenance program and inspections will prevent spills and leaks throughout the system, ensuring wastewater is not allowed to enter surface water drainage systems. Additionally, the grout plant footprint and the waste management facility pit will be maintained, and water and solids accumulations will be managed and regularly removed to prevent buildup.

11.4.2. *Water Treatment Plant Sludges*

Waste sludges will be produced during the operation of the onsite Water Treatment Plant (WTP). The sludges will be pumped to a sludge tank for holding. A licensed waste contractor will carry out collection and disposal of sludges where required.

11.4.3. *Oil Interceptor (Oils and Water)*

The oil interceptor will undergo regular maintenance and servicing based upon the specification outlined in the supplier guidelines and manuals. The silt removed from the silt trap will be collected and disposed of by a licensed waste contractor. The oil will be collected and disposed of by a licensed waste contractor.

11.4.4. *CESSPIT FOUL SLUDGES*

The cesspits installed as part of previous phases will undergo regular maintenance and servicing based upon the specification outlined in the supplier guidelines and manuals.

The foul sludge will be emptied from the tanks on a routine basis based upon site footfall and supplier recommendations. The tanks are fitted with high level alarms as an additional layer of safety.

12. INCIDENT AND EMERGENCY PLANNING

Potential environmental issues and emergencies are considered as part of the project planning, and the appropriate prevention and control measures put into place. These measures are communicated to all people working on the project including subcontractors through the site induction and toolbox talks.

The emergency contacts list and drainage plan/ site plan (including the location of spill kits) will be posted on notice boards. Spill kits will be located within the stores in the site compound, at strategic points around the site and within all working vehicles. Vehicles will carry enough spill kit to clean up the amount of diesel/ oils they are carrying.

All employees will be instructed to bring any environmental incidents they identify to the immediate attention of Site Management, after first taking what steps to contain/ remediate the incident (without putting the health and safety of themselves or others at risk).

Environmental Emergency Preparedness Plans (EEPP) have been prepared specifying the actions to be undertaken in the event of an environmental emergency or a breach of the measures set out in the EIA. The EEPP will be displayed on all site notice boards. In accordance with the EEPP, the Contractor's Environmental Manager will be notified of environmental incidents.

13. DEFINITIONS AND ABBREVIATIONS

NYMNPA – North York Moors National Planning Authority

MTS – Mineral Transport System

CEMP – Construction Environmental Management Plan

HGV – Heavy Goods Vehicle

EIA – Environmental Impacts Assessment

PMWSP – Precautionary Method of Working Standard Procedures

CSEF – Community Stakeholder Engagement Framework

ANPR – Automatic Number Plate Recognition

AMS – Arboricultural Method Statement

MSDS – Material Safety Data Sheet

COSHH – Control of Substances Hazardous to Health

IBC – Intermediate Bulk Container

PSMP – Protected Species Management Plan

RPZ – Root Protection Zone

WSI – Written Scheme of Investigation

WTP – Water Treatment Plant

EEPP – Environmental Emergency Preparedness Plan

AIL – Abnormal Indivisible Loads

14. ATTACHMENTS

ATTACHMENT A – Community Stakeholder Engagement Framework

ATTACHMENT B – Precautionary Method of Working

ATTACHMENT A - COMMUNITY STAKEHOLDER ENGAGEMENT FRAMEWORK

Community and Stakeholder Engagement Framework

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Community and Stakeholder Engagement Framework

Contents

Community and Stakeholder Engagement Framework

1 Purpose and Scope

1.1 Background

The Company takes its responsibility to the local area very seriously and is committed to taking an active and positive role in the local community. This means minimising the potential adverse impacts on people living and working in the area, making a meaningful contribution to the social and economic well-being of the area, keeping the community informed as the project develops and responding quickly to questions and concerns.

There is widespread interest in the Company's Woodsmith Project (the Project) at local, regional and national levels. This is demonstrated by the ongoing media and stakeholder enquiries, as well as the levels of participation during the planning consultations and at Company events.

Anglo American (the Company) successfully engaged the community and other key stakeholders during the planning period and has continued to do so beyond, gaining widespread support for the Project. This has helped to provide the Company with a social license to operate. Maintaining this throughout the construction period is important to the successful delivery of the Project and is a key objective of the Company's board and management team.

1.2 Purpose

This Community and Stakeholder Engagement Framework (CSEF or the Framework) aims to set out a clear communications approach during the construction period which, when implemented correctly, can help to maintain the Project's social license to operate.

1.3 Scope

The Framework sets out an approach to community and stakeholder communications during the construction period. It outlines the overall strategy, identifies the main stakeholder groups and details the engagement objectives and activities. Stakeholders have been identified as those groups in the local area who have the potential to be impacted by construction, and as such does not include wider corporate stakeholders such as investors or customers.

The Framework sets out the roles and responsibilities of the Company and the principle construction contractors for implementing and managing its delivery.

1.4 Standards and compliance

The Framework is in compliance with planning obligations relating to community and stakeholder engagement including: producing a communications plan; the establishment of the Liaison Group Forum and Traffic Management Liaison Group; notification to neighbours of construction activities, particularly in relation to noise; dealing with complaints and initiatives to promote local benefits.

It is not within the scope of this plan to include engagement with the planning authorities and other statutory bodies in relation to the compliance with planning obligations and further environmental requirements, other than those specifically regarding community engagement.

1.5 Document review

The Company is committed to regularly reviewing its approach. This is the fifth time this document has been updated since the off-site highways improvement works were undertaken on the main transport route and construction started at Woodsmith, Ladycross Plantation, Lockwood Beck and Wilton. The principles of the Framework therefore remain unchanged, with the addition of the good practice learnt over the last five years.

The Framework will be reviewed on annual basis by the General Manager External Affairs and Corporate Relations Director, in consultation with the land, environment and planning team, and updated as necessary. It will be distributed to the list shown in section 1.6. Lessons learnt will be adopted into the working practices of the social performance team under the direction of the Corporate Relations Director.

1.6 Distribution list

- North York Moors National Park Authority
- North Yorkshire County Council
- Principle contractors

2 Engagement Strategy

2.1 Rationale

The strategy is based on the principle that the local community and key stakeholders should be kept informed of developments and in advance of them occurring. The failure to communicate often leads to a communications vacuum and this in turn leads to misinformation and rumours which is unhelpful for all stakeholders.

Similarly, providing channels for feedback to the Company in the first instance, including direct contact with the community relations team, allows local people or spokespeople to be engaged in matters that might affect them. Since construction started on the off-site highways works over five years ago, the vast majority of questions or concerns about the Project have come directly to the Company. This demonstrates the importance of developing and maintaining relationships 'on the ground'.

Keeping people informed is not just about notification of physical activities during the construction period, but is also about allowing a channel for feedback that might raise an issue or local knowledge that the Company or its contractor teams were not aware of. It also enables a channel to promote the benefits of the Project as well as engaging in other positive public relations activities.

Any materials that are prepared for public consumption to explain parts of the construction work are designed and drafted in a manner that promotes the understanding of works or issues in as clear and straightforward manner as possible.

2.2 Approach

1. **Conduct pre-briefings for key events or activities**
   Providing clear information before each phase of works commences at the Project sites detailing what construction will involve, when it will take place and the measures to limit impacts. Since

construction started this has included newsletters, mailouts, direct face-to-face meetings, drop-in events, public meetings, press releases and notices in the local media.

2. **Have effective ongoing management of local communications**
   Providing ongoing updates about construction progress and establish mechanisms that enable concerns to be raised and acted upon. This includes participation in the various liaison groups and clear processes to manage incoming queries or complaints. These have worked well since construction started. The Company also operates a 24-hour community helpline.

3. **Community benefit initiatives**
   Undertaking and promoting regular initiatives that deliver community benefits such as education schemes and employment and business opportunity information sessions. These have been ongoing since construction started and have been well received by the community.

Further details on the methodology for pre-briefings, ongoing management and community benefits initiatives are available in sections 4.2 – 4.4.

3 Stakeholder Identification

Stakeholder groups have been identified and engaged as the Project has developed and can be broadly categorised as follows:

1. **Site neighbours**
   Residential neighbours and/or landowners, businesses and organisations close to the individual construction sites. This also includes those directly affected in other areas such as those living close to key transport corridors or junctions. Approximately 70 households have been identified as 'site neighbours' to the Woodsmith, Ladycross Plantation and Lockwood sites and regular contact has been maintained since construction commenced. In addition, links with the neighbourhood of Dormanstown have been established since construction commenced at the Wilton site.

2. **Community representatives**
   This group includes elected representatives of the community including parish and town councils, local authority officers and councillors, and local MPs.

3. **Interest groups**
   Business networks, environmental bodies, other local clubs and groups.

4. **Education Institutions**
   This includes local schools, colleges, universities and other training providers.

5. **Media**
   A wide range of online, print and broadcast outlets and journalists are considered key stakeholders.

6. **General public**
   The wider public as accessed through media channels, the website, social media or site signage etc.

A register has been developed for each Project site for of these broad groups, which is reviewed and updated. Stakeholder engagement takes into account the needs of vulnerable and disadvantaged groups, making sure that information about the Project is accessible and people are able to contact the

Company and receive a prompt response. This is ensured by utilising a broad range of engagement channels, as set out in section 4, and holding public events in accessible venues.

4 Engagement Methodology

This section sets out how community and stakeholder communications will be handled.

4.1 Identify stakeholders

The broad stakeholder groups have been identified, together with specific stakeholders relevant to each of the construction sites that are most likely to be impacted by the works. This includes landowners and local residents in close proximity to the sites.

4.2 Pre-briefings for key events

Before each phase of construction starts, or before a specific construction activity that has the potential to impact stakeholders, it is important to provide information to the local community. For the purpose of this Framework these stages are defined as "construction events" (these are listed in Appendix 1). Each construction event triggers the requirement for pre-briefing activities. The level of pre-briefing activity will vary, taking into account the extent of the local impact anticipated.

The pre-briefing information will include details about what construction will involve and how people can contact the Company if they have questions or concerns. Reassurance will be given that measures will be taken to limit adverse impacts to an acceptable level and that planning conditions and other requirements are in place to ensure that this happens. As a minimum, the pre-briefing activities will include:

- Letters – Letters and or emails should be sent to those that are likely to be immediately affected. This might include neighbouring residents or households and businesses on access routes. As a courtesy, the same information will be sent to the local Parish Council, borough and county councillors covering those areas.

- Visits and phone calls – In addition to letters, affected households and businesses will be visited, or at the very least receive a telephone call.

For construction activities that are more significant, in terms of their potential for stakeholders to be affected, the Company will use the following pre-briefing methods. The precise details and extent of pre-briefing will be a matter of judgement and as a result of discussions between the contractor and the Company and, where appropriate, the planning authorities. Activities may include:

- Newsletter / Leaflet – A short summary newsletter or leaflet about the works will be made distributed, including local noticeboards and community facilities.

- Exhibitions / Open days – In the case of certain key events, such as the main shaft sinking, it will be appropriate to inform local residents and the wider general public through open days prior to works starting. This includes further information on exhibition boards and will be attended by key personnel from the Company and contractors, who are be able to respond to queries and provide reassurance on potential concerns. Ten of these sessions have taken place since construction started.

- Press release – If appropriate (often where a wider audience is potentially affected or interested in the works planned) then a press release will be prepared detailing the key facts. Any press release needs to be signed off by the Company in a timeframe that makes sure newspaper deadlines are met. Where possible, coverage should always appear in the week prior to the proposed activities beginning. The local media has been particularly useful in instances where the community beyond the immediate site neighbours could be affected, such as public highways disruption.

- Website updates – Details of key events are uploaded to the Company website. Some works may also require more detailed information and documents to be uploaded.

- Social media updates – The Company will control its social media accounts. As above, the contractor will be expected to provide the relevant details to the Company in a timely fashion so the relevant information can be released through its social media channels.

- Stakeholder briefings – In some circumstances specific stakeholders will be individually briefed to inform them of key events. This may include elected representatives, local authority officers or interest groups. The Company will take the lead on such matters and will involve contractors where appropriate.

4.3 Ongoing management

Local residents and stakeholders will continue to be engaged throughout construction (i.e. general updates in addition to those covered under 'key events' in appendix 1). This will enable the Company to provide regular updates of the Project's progress, and that it is being delivered in accordance with planning consents and any other Company commitments. Alternatively, if the Project is not progressing as expected it is important that stakeholders are provided with an explanation and reassurance that corrective measures will be implemented.

In addition, on-going engagement will include a range of communication channels that enable stakeholders to raise issues and ask questions and for the Company to respond to these.

4.3.1 Liaison Group Forum

The Liaison Group Forum (LGF) was established prior to the commencement of construction and has met quarterly. It is chaired by the Company and its membership includes representatives from the National Park Authority, parish and town councils and wider community stakeholder representation as appropriate. The meetings take place in community venues, such as village halls, close to the Woodsmith site and are open to the general public to attend and to ask questions.

The purpose of the group is to facilitate liaison between local stakeholders about construction, providing updates about progress, and to enable issues and concerns to be raised and resolved.

4.3.2 Industrial Business Group

The Industrial Business Group (IBG) was established to facilitate liaison between the businesses based at Wilton International and residents from the neighbourhoods in close proximity of the site.

Meetings are held bi-monthly and attended by the major businesses on the site, local councillors and residents. The Company joined the group once construction started on the Wilton site.

4.3.3 Traffic Management Liaison Group

The purpose of this group is to facilitate liaison between local authorities and other interested stakeholders in regard to construction traffic. The group, which meets quarterly, oversees the management and monitoring of the Construction Traffic Management Plan (CTMP) and is chaired by the Company. The meetings take place after the LGF meetings, on the same day and venue, with traffic issues raised by the LGF addressed by the group.

There is representation from the National Park Authority, highways authorities, local authorities, the police and other stakeholders as invited.

4.3.4 24-hour community helpline

To ensure that there are accessible points of contact for the local community and wider stakeholders a 24-hour community helpline has been established, which is delivered by a specialist contractor. In addition there is a community email address, which is managed by the Company.

4.3.5 Regular briefings and updates

Key individuals and organisations are regularly briefed and updated. Similarly to pre-briefings for key events, updates are communicated through the following channels:

- Public meetings and presentations – Parish council and town council meetings are regularly attended, together with presentations to local interest groups.

- Site visits and meetings – visits to the Project sites for key stakeholders have been an effective way to communicate site activity and progress. In addition, drone footage of the project sites is regularly used to show progress and is used in Project presentations and on the Company's website.

- Press releases – the print and broadcast media are utilised extensively to communicate with the wider community and at a regional and national level.

- Newsletters, website and social media – regular updates produced throughout construction via the website, leaflets, newsletters, social media and publications relating to specific issues, such as careers. Videos, including footage of the sites and interviews with key Project personnel have also been an effective tool.

4.4 Community benefit initiatives

The Company has made a number of commitments to benefit the local area during construction such as providing employment and supply chain opportunities, training schemes, school outreach programmes and funding community projects. It important that these are implemented and widely promoted so that the community and stakeholders are aware that the Company's commitments are being delivered. The activities and initiatives, some of which are planning obligations in the S106 agreements, are outlined below:

- Funding to Scarborough Borough Council and Redcar and Cleveland Council to identify and prepare local people for employment opportunities.

- Funding to raise awareness of science, technology, engineering and maths (STEM) related careers in schools in North Yorkshire and Redcar and Cleveland.

- Targets specified in the S106 agreement - take on 50 apprentices, recruit 15 local students on the Company's Undergraduate Programme and train 300 adults.
- Quarterly employment opportunity sessions to promote job opportunities to local people and meet the buyer events for local businesses.
- Education outreach initiatives, careers events and presentations.
- Funding community projects through the Woodsmith Foundation.

4.5 Dealing with complaints

The Company aims to respond promptly to complaints and concerns, ensuring that issues are investigated and resolved as quickly as possible. The Company's approach is detailed in its Complaints Procedure – see Appendix C.

5 Roles and Responsibilities

This section provides a framework that identifies responsibilities for the delivery and management of community and stakeholder engagement, focusing on roles of the Company and the principle construction contractors. The Company will be responsible for all community and stakeholder engagement during construction, supported by each construction contractor as required.

5.1 Anglo American

The Company will be responsible for:

- Identifying key stakeholders likely to be impacted by the works.
- Undertaking pre-briefing activities before construction starts such as:
    - Open Days / exhibitions as appropriate.
    - Producing information outlining what is involved, impacts and mitigation, contact information, etc.
    - Direct correspondence with neighbours and landowners about construction events
- Liaison with the planning authorities and community representatives, including chairing the Liaison Group Forum and Traffic Management Liaison Group.
- Media relations.
- Manage the complaints procedure.
- Producing project newsletters, social media and updating the website.
- Direct engagement and briefings with key stakeholders including local residents, community representatives and interest groups.

5.1.1 Social performance team

The Company's social performance team is responsible for implementing the Framework in liaison with others in the Company as appropriate.

The Company's Corporate Relations Director has overall responsibility for all company communications and external relations. The Corporate Relations Director chairs the Liaison Group Forum.

The General Manager External Affairs, reporting to the Corporate Relations Director, manages the implementation of the approach detailed in the Framework. The Local Liaison Officer, Social Programmes Manager and Education Programme Manager report to the GM External Affairs, and are further supported by the EA to the Corporate Relations Director.

The social performance team work closely with other departments in the Company in the implementation of the Framework, particularly the land, environment and planning team as well as the project development team. They assist in providing relevant information, investigating and resolving complaints, and attending Company events and public meetings as required. The Company's Logistics Manager chairs the Traffic Management Liaison Group.

5.2 Construction Contractors

Having developed and maintained positive relationships with key local stakeholders since the Project was launched in 2011, Anglo American takes the lead role in all community and stakeholder engagement. Each of the construction contractors will be required to support the Company's stakeholder engagement approach as follows:

- Provide expected durations of phases or work, their potential impact on the local community and mitigation measures where required.
- Provide details of any expected public transport diversions, delays, planned road closures, impacts on highways, interrupted access for residents/ businesses, or other expected community disruption.
- Participate in employment opportunity sessions, meet the buyer events, and education outreach events as required.
- Cooperate with Anglo American in media events and provide information to the Company for publications, the website, newsletters, etc.
- Adherence to Anglo American's communications protocols and guidelines.
- Attend the liaison groups, parish/town council meetings and assisting Anglo American as required.
- Ensure that all sub-contractors comply with stakeholder and community relations requirements.

Appendix A – Construction Events

The following provides a list of construction events which trigger the requirement for pre-briefing activities, as outlined in section 4.2. The list is not exhaustive and there may be other events or activities not listed here that could be classified as construction events as a result of discussions between the Company and its contractors.

The construction events for the purposes of this Framework are:

- Any significant geotechnical investigation or drilling works
- Main Woodsmith Mine shaft sink
- Main Lockwood Beck shaft sinking
- Main Ladycross Plantation shaft sinking
- MHF construction
- Harbour construction
- Other construction activities with the potential to affect stakeholders including site neighbours or road users in regard to noise, light, disruption to the public highway, etc. Examples include an abnormal load arriving to site or a short period of piling.

Appendix B – Engagement Activities Summary

The table below provides an 'at a glance' overview of the main community and stakeholder engagement activities, together with the respective roles of Anglo American and contractors.

	Pre-briefing activities	Ongoing management	Community benefit initiatives
Anglo American	• Establish Liaison Group Forum and Traffic Management Liaison Group • Project update newsletter • Media, website update, social media • Briefings with site neighbours, landowners, community representatives and other key stakeholders as identified • Produce leaflet detailing upcoming construction activities • Send letters to stakeholders likely to be immediately affected • Hold public open days / exhibitions	• Chair Liaison Group Forum and Traffic Management Liaison Group • Attend the Industrial Business Group • Manage 24-hour community helpline and cropnutrients.info@angloamerican.com • Attend parish and town council meetings quarterly • Regular updates to site neighbours, landowners, community representatives and interest groups • Site visits • Media, website update, social media • Manage complaints procedure	• Training targets and promotion of initiatives funded by the S106 • Promote activities of the Sirius Minerals Foundation • Organise meet the buyer events • Organise regular employment opportunity sessions • Deliver education outreach programmes
Construction Contractor	• Provide information to Anglo American to be used in leaflets, letters, web content, etc., as required • Attend public open days/exhibitions and meetings with stakeholders as required	• Attend liaison groups, parish council and other meetings as required • Provide information to support on-going community and stakeholder relations • Participate in media events as required • Adherence to complaints procedure, media protocol and crisis response procedure	• Involvement in community benefit initiatives as required

Community engagement is tracked across these three elements. Activities and complaints are reported in the Company's annual Responsible Business Report. Minutes of the Liaison Group Forum, which includes community engagement as a standing agenda item, are published on the Company's website.

By being proactive in building and maintaining relationships in the community, the Company is always receiving feedback about its performance. This helps to inform the Company on what it could be doing better, enables it to respond quickly to concerns and pre-empt them in the future and is an important part of annual review of the Framework.

Appendix C – Complaints Procedure

This procedure outlines the Company's standards in handling complaints and the process of managing complaints from receipt through to resolution. The procedure has been updated to take into account the lessons learnt during the first two years of construction.

1 Standards for Handling Complaints

- All complaints will be treated seriously, fairly and with courtesy;
- Complaints will be responded to quickly – we will acknowledge a receipt of a complaint straight away wherever possible;
- We will investigate and aim to resolve complaints within a maximum of three days, making sure that initial feedback is provided within one day; and
- We publish information about complaints, with the identity of the complainant kept confidential, to the Liaison Group Forum and in the Company's annual Responsible Business Report.

2 Stages of the Complaints Procedure

2.1 Receipt of complaint

The vast majority of complaints are received directly by the Anglo American community relations team through a variety of channels, e.g. directly to a team member, via the general cropnutrients.info@angloamerican.com email, social media, parish council meetings or the 24-hour community helpline. Relationships with the regulatory authorities are well established and complaints received by them are forwarded to the Company's community relations team to investigate.

The team aim to acknowledge a complaint straight away and ascertain the relevant details as soon as possible.

Occasionally a complaint is made directly to a Project site. In this instance the community relations team will be informed and further communication with the complainant managed by them.

2.2 Investigation

In all cases the community relations team will notify the Anglo American site manager, the environment team and the logistics team (where complaints are related to traffic). The site manager will lead the investigation, delegating where appropriate and liaise with the relevant contractor. All relevant personnel will be kept updated.

If remedial action is required this will be implemented as quickly as possible in consultation with the environment and planning team, community relations team and others as appropriate.

2.3 Feedback

The community relations team will feedback to the complainant within a maximum of three days, with initial feedback given within one day. Further details will be sought from the complainant if required.

The complainant will be given the details of any remedial action taken and have the opportunity to discuss the outcome of the investigation with the community relations team, who will involve others as appropriate. If further relevant information comes to light, the complaint will be investigated again.

2.4 Log and Review

Complaints are logged and reported to the next Liaison Group Forum (LGF) meeting. The minutes of LGF meetings are published on the Company's website.

Complaints are reviewed to establish whether action can be taken to reduce the likelihood of similar complaints in the future, and whether the way in which the complaint was dealt with could be improved.

ATTACHMENT B – PRECAUTIONARY METHOD OF WORKING

Precautionary Method of Working (PMoW) for Site Clearance (Ecology)

The Precautionary Method of Working (PMoW) for site clearance predominantly relates to the protection of reptiles and nesting birds which may be present within the development site although requirements for otters and badgers have also been included for completeness.

General overview

The construction site manager will ensure that anyone undertaking construction works on the site (including sub-contractors) is made aware of the potential for the site to support nesting birds, common reptile species and other protected species, where to expect them, their protected status and the procedure (see below) to follow in the unlikely event that nesting birds or common reptiles are discovered during works. Where applicable this advice will be given through site inductions, ecological tool box talks or similar.

Should any nesting birds, reptiles or other species be discovered during construction, which are likely to be effected by the development, works will cease immediately. The construction site manager will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide.

Reptiles

Within the development's construction zone the following methods of working will be adopted:

- All clearance works will be undertaken when reptiles are likely to be fully active i.e. during the period March/April to September/October inclusive, but this is weather and temperature dependent;
- Where clearance works cannot be undertaken within this period, additional surveys and/or mitigation measures may be required to confirm the absence of reptiles prior to clearance works, and a suitably qualified ecologist (the project ecologist) should be on site during the works to inspect areas immediately prior to clearance;
- Clearance of dry stone walls, logs, brash, stones, rocks, or piles of similar debris will be undertaken carefully and by hand and supervised by a suitably qualified ecologist;
- Clearance of tall vegetation (any vegetation over 150mm) should be undertaken using a hand held strimmer or brush cutter with all cuttings raked and removed the same day. Cutting will only be undertaken in a phased way which may either include:
    - Cutting vegetation to a height of no less than 30mm, clearing no more than one third of the site in anyone day or;
    - Cutting vegetation over three consecutive days to a height of no less than150mm at the first cut, 75mm at the second cut and 30mm at the third cut;
- Following removal of tall vegetation using the methods outlined in above remaining vegetation will be maintained at a height of 30mm through regular mowing or strimming to discourage common reptiles from returning;

- Ground clearance of any remaining low vegetation (if required) and any ground works will only be undertaken following the works as above;
- Any trenches left overnight will be covered or provided with ramps to prevent reptiles from becoming trapped and enable escape; and
- Any building materials such a bricks, stone etc. will be stored on pallets to discourage reptiles from using them as shelter. Any demolition materials will be stored in skips or small containers rather than in piles on the ground.

Nesting Birds

Within the development's construction zone the following methods of working will be adopted:

- Vegetation clearance that is required will be undertaken outside of the breeding bird season (i.e. the works will be undertaken between September and February);
- Any demolition work that is required will be undertaken outside of the breeding bird season (i.e. between the works will be undertaken September and February);
- Where clearance works or demolition works cannot be undertaken out with this period, additional surveys maybe required to verify absence of breeding birds prior to clearance works and an ecologist should be on site during the works to inspect areas immediately prior to clearance, or at least no less than 24 – 48 hours before the works commence. The area of inspection should extend for at least 500m from the area of works;
- Where felling outside the breeding season is not possible a sensitive felling methodology will be implemented, involving the identification of specific areas to be felled, followed by surveys for occupied nests (or nests being built) being carried out by a suitably qualified ecologist (the project ecologist) undertaken a maximum of 24 - 48 hours prior to the commencement of works) and extending over an area of at least 500m from the area of works;
- If active birds' nests are found within the following distances from site, the area should be roped off and no works should be undertaken in the these exclusion areas until the birds have fledged and the nests are empty:
    - Common crossbill - 150m;
    - Nightjar - 500m;
    - Goshawk - 150m; and
    - All other species - 10m.
- Alternatively, liaison with Natural England may be undertaken to agree the approach to working within the exclusion zones of the nest sites specified above.

Other Protected Species

Within the development's construction zone the following methods of working will be adopted:

- Dust minimisation methodologies will be implemented and adhered to at all times;
- Construction lighting will be directed away from areas of retained habitat wherever possible;
- Pollution prevention controls will be implemented and adhered to at all times; and
- All excavations will be covered every night to reduce the risk of otters, badgers or any other species falling into the excavations and becoming stranded or if this is not possible then a means of enabling their escape will be provided.

NYMNPA

16/02/2024

WOODMITH PROJECT

(788.5030)

NOISE AND VIBRATION MANAGEMENT PLAN - PHASE 9 - NYMNPA CONDITION 18 - LADYCROSS PLANTATION

/

40-STS-LC-2100-EN-PL-00042

(Royal HaskoningDHV)

Revision	Date of issue	Prepared by	Checked by	Approved by	Changes
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REPORT

Phase 9 - Ladycross Plantation Noise and Vibration Management Plan

Ladycross Phase 9 - NVMP

Client: STRABAG AG

Reference: 40-STS-LC-2100-EN-PL-00042 Rev 0

Status: 01/Final

Date: 14 February 2024

Royal HaskoningDHV

Enhancing Society Together

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Table of Contents

Table of Tables

Appendices

1 INTRODUCTION

1.1 Purpose of this Report

1.1.1 In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to North York Moors National Park Authority (NYMNPA) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning permission was subsequently granted in 2015 subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA.

1.1.2 This document has been prepared on behalf of STRABAG AG, who are the contractor delivering part of the works on behalf of Anglo American Ltd (Anglo American); and details the requirements with respect to noise and vibration management for the Phase 9 Works (see Paragraph 1.1.4 below) at the Ladycross Plantation site.

1.1.3 This document is required to partially satisfy the requirements of Condition 18 of the NYMNPA planning permission. The details of this planning condition, and how the relevant requirements have been addressed, are set out in Table 1-1.

Table 1-1: Condition NYMNPA 18 Noise and Vibration Management Plan

NYMNPA 18	Compliance with Condition NYMNPA-18
Prior to the commencement of each Phase of Construction at Dove's Nest Farm or Lady Cross Plantation, a Noise and Vibration Management Plan (NVMP) for the control, mitigation and monitoring of noise and vibration for both construction and operational phases at the two sites shall be submitted to and approved in writing by the MPA in consultation with the SBC EHO. The scheme shall set out the following:	This document addresses Phase 9 Works at Ladycross Plantation. Works at Woodsmith Mine are addressed in a site specific NVMP and are therefore not addressed in this Plan.
Noise-sensitive receptors for which predictions shall be made and at which the noise and vibration limits shall apply and which shall include recreational receptors.	Section 3.1
Predicted noise levels at the noise-sensitive receptors from noise and vibration generated at the DNF and LCP sites for the key construction phases during the forthcoming year including any periods in which the higher daytime limit of 70 dB L_{Aeq} shall apply (permitted 56 days for temporary works to create noise-reducing bunds and/or barriers as per Conditions 20 and 22).	Section 3, and Appendix A
The best practicable means which will be used to control noise and vibration levels on site including such measures proposed in the Environmental Statement (September 2014 as updated by the Supplementary Environmental Statement dated February 2015) and the Supplementary Environmental Statement dated July 2017 (updated by further information dated October and November 2017) as relevant. Such measures shall include, but are not limited to: the use of the quietest available plant, equipment and techniques; the regular maintenance and inspection of such plant and equipment; the use of cladding, attenuators and barriers to reduce noise levels from noisy plant and operations; the specification of appropriate reversing alarms to minimise annoyance; and, measures to reduce vibration and air overpressure during blasting.	Section 5

NYMNPA 18	Compliance with Condition NYMNPA-18
Details of the noise and vibration monitoring system to be installed around the DNF and LCP sites to continuously log noise levels during construction and operation. The system shall include at least six noise monitors installed around the boundary of the Dove's Nest site and at least four monitors at key residential receptors near the Dove's Nest site and at least four noise monitors around the Lady Cross Plantation Site and at least three monitors at key residential receptors near the Lady Cross Plantation site.	Section 4
The precise number and location of noise monitors shall be set out in the NVMP. The developer shall use reasonable endeavours to obtain access to the residential receptor properties for the installation of noise monitors and only if access cannot be obtained the number or location of noise monitors may be reduced. The MPA and the SBC EHO and/or their advisers shall be granted access to inspect the noise and vibration data whenever required, records of the data should be kept for a reasonable period and these records should be accessible by the public.	Section 3, Section 4 and Figure B.1
Details of the procedure to be followed in the event that the noise predictions detailed in the NVMP or the noise limits detailed in conditions 20 to 23 are exceeded. Such procedures shall require the investigation of the reasons for the breach of the limits and the cessation of the activity causing the breach until such a time as additional mitigation can be provided.	Section 5
Details of how the residents will be informed and consulted about the site operations and progress, particularly in regard to blasting and especially noisy operations including details of complaints logging and management procedures and a 24-hour telephone incident hotline. Details of the procedure for investigating complaints and informing complainants of the results of such investigations and of any actions resulting from them.	Section 5
The NVMP shall be adhered to at all times unless agreed previously in writing by the MPA.	
The NVMP shall be updated and agreed whenever appropriate to reflect changes in the programme during construction and operation and at intervals not less than 6 months after the initial start on site and thereafter annually.	Section 1

1.1.4 This NVMP relates to the Phase 9 Works at Ladycross Plantation only. These works comprise the following:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant; and
- Installation and operation of Mine Rescue team facility.

1.1.5 As set out in the Phase 9 Construction Environmental Management Plan (CEMP; reference 40-STS-LC-2100-EN-PL-00040), the installation of service trenches and walkways and surface works (blacktop installation) will be undertaken from 07:00 to 19:00 only and the remainder of the Phase 9 Works will be undertaken continuously i.e. 24 hours a day.

1.1.6 Contractors responsible for implementing the Phase 9 Works have advised that some works associated with Phases 6, 7 and 8 (as detailed in previous reports) will continue throughout Phase 9; these are detailed in Appendix A.

Planning Conditions

1.1.7 In addition to Condition NYMNPA 18, two further conditions NYMNPA 22 and NYMNPA 23 establish noise limits relating to the Ladycross Plantation site (see **Section 2.2**). Planning condition detail is provided in Table 1-2 and Table 1-3.

Table 1-2: Condition NYMNPA 22 Noise and Vibration Management Plan

NYMNPA 22	Compliance with Condition NYMNPA-22
Day-time (07.00 hrs to 19.00 hrs) noise levels $L_{Aeq,1hr}$ from mine construction at the Lady Cross Plantation site, excluding blasting operations, shall not exceed 55 dB $L_{Aeq,1hr}$ and for short-term, construction activities solely relating to the demolition of existing buildings and erection of new structures excluding earth mound and bunds shall not exceed 65dB $L_{Aeq,1hr.}$ An upper limit of 70 dB $L_{Aeq,1hr}$ for the purposes of temporary noisy operations to provide noise-reducing earth bunds and / or barriers may be permitted for up to 56 days in any calendar year provided such temporary operations are specified and agreed in the NVMP described in Condition 18. Each calendar day when the higher temporary noise level is exceeded shall be counted as one day. Noise levels shall be measured in accordance with BS 4142:2014 and shall apply at the curtilage boundary of residential properties and at the following recreational receptors: on the open access land to the north and east of the site at OS Grid Reference locations 810684 and 819077.	Section 3, and Appendix A

Table 1-3: Condition NYMNPA 23 Noise and Vibration Management Plan

NYMNPA 23	Compliance with Condition NYMNPA-23
Evening (19.00 hrs to 22.00 hrs) and night-time (22.00 to 07.00 hrs) noise levels $L_{Aeq,1hr}$ from mine construction at the Lady Cross Plantation site, excluding blasting operations, shall not exceed 42 dB $L_{Aeq,1hr}$. Noise levels shall be measured in accordance with BS 4142:2014 and the limits apply at the curtilage boundary of residential properties.	Section 3, and Appendix A

1.1.8 Condition NYMNPA 26 relates to vibration arising from construction activities other than blasting, details are provided in Table 1-4.

Table 1-4: Condition NYMNPA 26 Noise and Vibration Management Plan

NYMNPA 26	Compliance with Condition NYMNPA-26
Vibration from construction work on site and during operation (but excluding blasting) shall not exceed 0.3mm/s (PPV) at any residential property at any time.	Section 3.3

1.1.9 In this document, the term *"construction"* includes all physical and related engineering and construction activities associated with the Phase 9 Works, as described above. Updates to this plan will be prepared and submitted to the NYMNPA for approval in advance of subsequent construction phases and following any material design or method change.

2 GUIDANCE

2.1 Legislation and British Standards

2.1.1 Wherever practicable, construction will be carried out in accordance with:

- Planning Practice Guidance for Minerals (PPGM), 2014[1]
- BS 5228:2009+A1:2014 *Code of Practice for noise and vibration control on construction and open sites*[2].

2.2 Construction Limits

2.2.1 The PPGM includes noise limits which align with the established noise limits detailed in NYMNPA Condition 22 and NYMNPA Condition 23.

2.2.2 The established noise limits detailed in NYMNPA Condition 22 and NYMNPA Condition 23 (as measured at the identified receptors) remain as:

- 55 dB $L_{Aeq,1hr}$ for daytime (07:00 – 19:00);
- 65 dB $L_{Aeq,1hr}$ for the demolition of buildings and erection of new structures;
- Up to 70 dB $L_{Aeq,1hr}$ for temporary noisy operations to provide noise-reducing earth bunds and / or barriers; and
- 42 dB $L_{Aeq,1hr}$ for evening and night-time (19:00 – 07:00).

2.2.3 Established vibration limits for construction works (other than blasting) shall not exceed 0.3 mm/s. Vibration limits for blasting activities are outlined in Conditions 27 and 28, however blasting works are not anticipated at the Ladycross Plantation Site and are therefore not considered in the NVMP.

2.3 Construction Method

2.3.1 Contractors responsible for implementing these Phase 9 Works have provided details of the construction plan, number and type of plant items to be used and location/duration of construction activities within the site. Further detail is provided in the Phase 9 CEMP.

2.3.2 **Appendix A** details the plant items included within the noise model, their sound power level and location on site. Predictions of noise levels based upon these details are assessed within this NVMP.

[1] *Planning Practice Guidance for Minerals (PPGM), 2014 Department for Levelling Up, Housing and Communities (/government/organisation/department-for-levelling-up-housing-and-communities) and Ministry of Housing, Communities & Local Government (/government/organisations/ministry-of-housing-communities-and-local-government. (URL:https://www.gov.uk/guidance/minerals, accessed 03 February 2022)*
[2] *British Standards Institute (2014). BS 5228:2009+A1:2014 Code of Practice for noise and vibration control on construction and open sites*

3 PREDICTED CONSTRUCTION NOISE AND VIBRATION LEVELS

3.1 Baseline Receptor Locations

3.1.1 The Environmental Statement (ES) which accompanied the planning application included (Part 2, Chapter 8, Noise and Vibration) an assessment of construction noise at the following nearby residential locations:

- Ladycross Caravan Park Owner's Property, approximately 320m from the nearest site boundary;
- Davidson Farm, approximately 425m from the nearest site boundary; and
- Watergate Farm, approximately 365m from the nearest site boundary.

3.1.2 For the purposes of this NVMP the receptors detailed above are the residential receptors at which the noise limits in Conditions 22 and 23 apply, and for which predictions of construction noise were undertaken.

3.1.3 The following recreational receptors, detailed within Condition 22, were included within the construction noise calculations:

- Open access land to the north of the site (OS Grid Reference 816084), OSGB36 co-ordinates (m) X:481600, Y:508400; approximately 310m from the nearest site boundary; and
- Open access land to the east of the site (OS Grid Reference 819077), OSGB36 co-ordinates (m) X:481900, Y:507700, approximately 60m from the nearest site boundary.

3.2 Predicted Noise Levels

3.2.1 3-D noise modelling was undertaken using computational noise modelling software SoundPLAN (version 9.0) to predict construction noise levels associated with the Phase 9 Works. **Table A.1** and **Table A.2** in **Appendix A** show the predicted construction noise levels for the Phase 9 Works (including ongoing Phase 6, 7 and 8 works).

3.2.2 Predicted noise levels from the Phase 9 Works do not exceed the agreed construction noise limits at any of the identified noise-sensitive receptors during the day or night-time when the activity timing and physical mitigation measures described in **Section 5.3** are adopted.

3.3 Vibration

3.3.1 Ground-borne vibration assessments can be drawn from the empirical methods detailed in BS 5228-2:2009+A1:2014; in the Transport and Road Research Laboratory Research Report (TRRL) 246: Traffic induced vibrations in buildings 2; and within the Transport Research Laboratory (TRL) Report 429 (2000): Ground-borne vibration caused by mechanical construction works.

3.3.2 A series of calculations, in accordance with the empirical methods referred to above, were carried out based on typical construction activities, applying reasonable worst-case assumptions, in order to determine set-back distances at which critical vibration levels may occur. These were presented in the ES and are reproduced in **Appendix A**, **Table A.4**.

3.3.3 During Phase 9, no significant sources of vibration are to be present. Additionally, the minimum distance between the plant and any of the surrounding residential receptors is over 350m. At this distance, ground-borne vibration levels will be significantly lower than 0.3mm/s at all nearby sensitive receptors, i.e. significantly below levels which are considered to be *"just about perceptible in residential environments"*[3].

[3] British Standards Institution (2014). BS5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration'

4 NOISE AND VIBRATION MONITORING PROGRAMME

4.1 Vibration Monitoring

4.1.1 As detailed within Section 3.3 of this NVMP, construction activities during Phase 9 will not give rise to significant levels of vibration at nearby residential receptors.

4.1.2 The construction methodology for the Ladycross Plantation site is similar to works that are being undertaken at Lockwood Beck. There have been no complaints or incidents from vibration at the Lockwood Beck site for the Phase 6 & 7 works only. The following activities have been undertaken at Lockwood Beck without any vibration issues:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Operation of grout plant; and
- Installation and operation of Mine Rescue team facility.

4.1.3 Given the experience and knowledge gained from the Lockwood Beck site and the distance between the Ladycross Phase 9 Works and the residential receptors, vibration impacts are not anticipated. Vibration monitoring is therefore not proposed.

4.2 Noise Monitoring

4.2.1 Condition NYMNPA 18 specifies that continuous noise monitoring is undertaken during construction and operation at three key residential receptor locations near the Ladycross Plantation Site. Residential receptor locations are outlined in **Section 3.1.1**.

4.2.2 Monitoring is currently being undertaken both on and off site at the following monitoring locations:

- LC-NM1 – Ladycross Caravan Park Owner's Property;
- LC-NM2 – Centre of the site;
- LC-NM3 – Davidson Farm; and
- LC-NM4 – Barn Cottages (a temporary relocation from the North-east boundary of the site).

4.2.3 Noise monitoring locations are presented in **Appendix B, Figure B1**. The redline boundary shown on **Figure B1** is the land ownership boundary.

4.2.4 Although Watergate Farm is closer to the site boundary than Davidson Farm, similar construction noise is anticipated at these receptors due to the distance to the works and the intervening ground between the works and the receptors. This is confirmed by the noise predictions presented in **Appendix A**.

4.2.5 The noise measurements are conducted in accordance with the guidance contained in BS 7445 parts 1[4] and 2[5].

[4] *British Standard Institution (2003) BS 7445-1:2013 Description and measurement of environmental noise – Guide to quantities and procedures*
[5] *British Standard Institution (1991) BS 7445-2:1991 Description and measurement of environmental noise – Guide to acquisition of data pertinent to land use*

4.2.6 The sound level meters are fully calibrated, traceable to United Kingdom Accreditation Service (UKAS) standards and satisfy the requirements of BS EN 61672-1:2013[6] for a 'Class 1' Sound Level Meter (SLM).

4.2.7 The SLMs record L_{Aeq}, L_{Amax}, L_{A90}, and L_{A10} data with a 'fast' time constant and A-weighting. **Appendix C** presents descriptions of these terms.

4.2.8 The noise measurements are being conducted in accordance with BS 7445 with the SLM microphone mounted on a tripod or secured mounting pole at 1.5m above ground level and 3.5m away from any reflecting surface other than the ground. The instruments will be calibrated at monthly intervals during the monitoring period, and before and after any battery change using a portable field calibrator. Any deviations in the calibration level will be noted and reported within the summary reports.

4.2.9 The SLMs operate using a system of real time alerting which allows remote monitoring of noise levels and indication of noise levels approaching and/or breaching the limits. Alerts are managed by the Contractors who, following an investigation as to the cause of any alert (assisted by live audio observations provided by the monitoring equipment located at the boundary), will report the alert to North Yorkshire Council (NYC) (following the dissolution of Scarborough Borough Council in 2023) and the NYMNPA as necessary.

4.2.10 The SLMs are inspected during each field calibration and maintenance visit and any faults will be identified and rectified during the visits. Should faults require off-site repair a replacement SLM will be installed during the repair period.

4.2.11 Monitoring of weather conditions including wind speed and direction, rainfall, temperature and humidity is being carried out simultaneously at the Ladycross Plantation Site.

4.2.12 Reports are provided monthly to NYC and NYMNPA, detailing the type and system of sound level meters used and a summary of the measured noise data at each location with corresponding weather data and survey notes.

[6] *British Standard Institution (2013) BS EN 61672-1:2013 Electroacoustics. Sound level meters - Specifications*

5 MITIGATION AND PROCEDURES

5.1 Purpose of the Section

5.1.1 This section outlines measures to be taken by the Contractors to limit, and manage the impact of, noise. This section also outlines the Best Practicable Means and specific mitigation actions to be adopted.

5.2 Best Practicable Means

5.2.1 The Control of Pollution Act 1974 and BS 5228 define a set of Best Practice working methods and mitigation measures, referred to as Best Practicable Means (BPM). The following measures will be adopted:

- Regular construction meetings will take place to discuss the minimisation of noise emanating from the site, the potential for noise reduction for any upcoming activities and to identify any potential concurrent activities which may lead to noise levels requiring the upper limit of 70 dB $L_{Aeq,1hr}$. Occasions requiring these upper limits will be reported to the NYMNPA and SBC prior to the activities occurring and will be included within the regular communication to residents detailed within **Section 5.4**;
- Locating temporary plant so that it is screened from receptors by on-site structures, such as site cabins;
- Where practicable, not undertaking noisy activities concurrently close to residential receptors;
- Using modern, quiet equipment and ensuring such equipment is properly maintained (see **Section 5.2.8** below) and operated by trained staff (see **Section 5.2.10** below);
- Applying enclosures to particularly noisy equipment where possible;
- Ensuring that mobile plant is well maintained such that loose body fittings or exhausts do not rattle or vibrate;
- Ensuring plant machinery is turned off when not in use;
- Undertaking daily, pre-start inspections of plant and machinery;
- Providing local residents with 24-hour contact details for a site representative in the event that disturbance due to noise from the construction works is perceived (see **Section 5.4.1**); and
- Informing local residents about the construction works, including the timing and duration of any particularly noisy elements (see **Section 5.4.3**).

Management Structure and Responsibilities

5.2.2 Anglo American are accountable for compliance with environmental and approvals requirements. Contractors on site are responsible for undertaking construction activities in accordance with the requirements of this NVMP.

5.2.3 The CEMP provides details of the lines of responsibility for environmental management during the Phase 9 Works.

5.2.4 The Environmental Manager/Project Manager (or deputy) for each Contractor will be on site during working hours and will be responsible for robust implementation of noise management and mitigation measures.

5.2.5 The Operations Director/Project Manager (or deputy) for each Contractor is responsible for implementation of the appropriate Environmental Policy and the CEMP through:

- Compliance with contractual requirements regarding environmental matters;

- Adherence to the NVMP and associated control measures;
- Designated responsibility for environmental control during the works;
- Regular meetings with project team members to review environmental matters;
- Regular reporting to the employer on environmental matters;
- Ensuring adequate resources are made available;
- Managing and advising on environmental matters affecting the Project with the assistance of the Employer's Environment Manager, the Contractor's Environmental Manager and Environmental Inspector;
- Reporting to the Employer's Environment Manager on implementation of the NVMP;
- Carrying out regular internal audits and procedure review on environmental matters;
- Reviewing and mitigating all environmental impacts identified in submitted method statements;
- Recording and maintaining all environmental matters/incidents in accordance with reporting procedures; and
- Ensuring all team members work in accordance with the NVMP.

5.2.6 The Operations Director/Environmental Manager/Project Manager for the contractors and their appointed subcontractors engaged for the Phase 9 Works will, with the Employer's Environment Manager acting as coordinator, liaise to ensure regular review of environmental matters and appropriate assignment of responsibilities for Contractors' specific site activities.

Maintenance

5.2.7 Maintenance of plant will be carried out routinely and in accordance with the manufacturers' guidance.

5.2.8 A daily safety inspection of all plant and equipment will be undertaken to ensure that, as a minimum:

- all plant is in a good state of repair and fully functional;
- any plant found to be requiring interim maintenance has been identified and taken out of use;
- acoustic enclosures fitted to plant are in a good state of repair;
- doors and covers remain closed during operation (self-closing doors/covers are recommended); and
- any repairs are undertaken by a fully qualified maintenance engineer.

Training

5.2.9 The site induction programme and site rules will include good working practice instructions for site staff, managers, visitors and contractors to help minimise noise whilst working on the site.

5.2.10 The good working practice guidelines/instructions will include, but not be limited to, the following points:

- avoid unnecessary revving of engines;
- plant used intermittently will be shut-down between operational periods, where possible;
- avoid reversing wherever possible;
- contractors to be advised that reversing alarms on mobile equipment must be specified as low/white noise where safety requirements allow;
- report any defective equipment/plant as soon as possible so that corrective maintenance can be undertaken; and
- handle material in a manner that minimises noise.

5.3 Specific Mitigation

Bunds and barriers

5.3.1 Temporary storage bunds north of the Works, constructed during Phase 3, were included in the noise model, providing screening between the proposed construction works and the residential receptors. The Phase 7 works included creation of top soil and sub soil screening stockpiles and modifications to the Phase 3 bunds; however, the Contractor responsible for the works has confirmed that the Phase 3 bunds will be retained until the Phase 8 works are complete (which will overlap with some of the Phase 9 works). Once the Phase 8 works are complete the area to the north of the site will be reinstated and topsoil and subsoil bunds will be moved to the east of the site on top of what once was the lagoon.

5.3.2 As a replacement for the bunds to the north of the site a suitable container wall will be in place towards and running along the northern boundary of the site. This barrier has been included in the model.

5.3.3 The use of emergency equipment has not been included in the results shown in **Table A.1** or **Table A.2**. The use of emergency equipment is considered unlikely. Further modelling has been undertaken which indicates that the noise from emergency flaring, in combination with that from other Phase 9 activities at night, could result in exceedances of the evening and night-time noise limits by up to 1dB, at Davidson Farm and Watergate Farm. Exceedances are only anticipated when the wind is from the source to the receiver (i.e. from the north) and the prevailing wind direction at the site is from the southwest. Combined with the fact that the flare will only be used in an emergency, an exceedance of the noise level limit is therefore considered extremely unlikely.

5.3.4 Given the length of time that the temporary flare will be in place (the duration of the Phase 8 works), the night-time activities that will be being undertaken at the time of the flaring (if required) are not currently known, and neither is the future wind direction should such an event occur. Hence, it is not possible to identify specific mitigation measures to be applied in the scenario that flaring results in an exceedance.

5.3.5 Noise monitoring will continue to be used to identify any exceedances of the consented limits. Should flaring of gas be required, and noise monitoring stations surrounding the site indicate an exceedance at any receptor, it may be necessary to cease some or all non-essential noise emitting processes for the duration of the flaring outside of normal daytime hours. The modelling indicates that noise from the flare, without the contribution from other site activities, would not cause an exceedance of the evening and night-time limit.

5.3.6 Short-term exceedances of the noise level limit, if they do occur, as a result of temporary flaring, are not considered sufficient to be a breach of the site's planning obligations. This is because a temporary emergency event such as flaring does not necessarily fall within the scope of "mine construction" as referred to by the relevant planning condition (Condition NYMNPA 23) and best practicable means are being implemented to minimise noise from the site, including flaring, in accordance with Condition NYMNPA 18.

5.4 Communications

5.4.1 If monitoring indicates that the noise limits are being exceeded as a result of the works, or a complaint is received from a local resident, an investigation will be instigated in accordance with the Complaints Procedure provided in Appendix B to the Phase 3 CEMP.

5.4.2 Good relations with local residents in nearby noise-sensitive receptors will be maintained.

5.4.3 A Community and Stakeholder Engagement Plan is provided in Appendix A to the Phase 9 CEMP which details actions to be taken by Anglo American and the Contractors.

Appendix A Predicted Construction Noise Levels

The predicted noise levels detailed within the tables below are considered to represent the most conservative, worst-case, scenario without any emergency equipment operational. The modelled results for Phase 9 daytime construction works are detailed in **Table A.1**.

Table A.1 Calculated noise levels during Phase 9 – Daytime

Receptor location	Daytime (07:00–19:00)	
	Limit $L_{Aeq,1hr}$ dB	Maximum predicted $L_{Aeq,1hr}$ dB
Ladycross Caravan Park Owners Property	55	44
Davison Farm	55	46
Watergate Farm	55	44
Recreational Receptor OS Grid 816084	55	36
Recreational Receptor OS Grid 819077	55	54

The modelled results for Phase 9 evening and night-time construction works are detailed in **Table A.2**.

Table A.2 Calculated noise levels during Phase 9 – evening and night-time

Receptor location	Night time (19:00–07:00)	
	Limit $L_{Aeq,1hr}$ dB	Maximum predicted $L_{Aeq,1hr}$ dB
Ladycross Caravan Park Owners Property	42	39
Davison Farm	42	40
Watergate Farm	42	40
Recreational Receptor OS Grid 816084	N/A	31
Recreational Receptor OS Grid 819077	N/A	48

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Modelling Assumptions

The works at the site are considered to comprise mineral extraction and the conditioned noise limits are in accordance with the Planning Practice Guidance for Minerals (PPGM). The PPGM does not specify the method to be used to predict noise propagation; therefore, in line with acoustics industry best practice, noise propagation from the site was calculated using the ISO 9613-2 methodology.

The contractor responsible for the works provided a schedule of construction activities which includes the overlapping works from Phases 6, 7 and 8, in addition to Phase 9. This has been used to identify the following weeks of the schedule which potentially result in the worst-case impacts:

- Week 1:
  - Installation of service trenches and walkways
  - Assemble equipment, drill and set 480' of 8" surface pipe
  - Surface works – blacktop installation
  - Lagoon Backfill
  - General site activities
- Week 2:
  - Installation of service trenches and walkways
  - Drill 13,200 feet of 6.5" hole
  - Surface works – blacktop installation
  - Remove existing welfare
  - General site activities
- Week 3 to 4:
  - Installation of service trenches and walkways
  - Drill 13,200 feet of 6.5" hole
  - Surface works – blacktop installation
  - Stone levels through car park
  - Backstop installation car park
  - Soft landscaping of lagoon and other areas
  - Grout plant demob LWB and erection LDX
  - General site activities
- Weeks 14 to 24:
  - Construction and use of Adit connection to the Mineral Transport System (MTS) shaft
  - General site activities
- Weeks 25 to 132
  - Tunnel Boring support works
  - Operation of grout plant
  - General site activities

Separate modelling was undertaken for each potentially worst-case week, including the simultaneous operation of all the identified activities due to the ongoing works. The maximum of the predicted noise levels from each modelled scenario at each receptor are provided in Tables A.1 and A.2.

Overall, the model setup and assumptions made on the number of plant and their location within the site were conservative, and therefore the predicted impacts are considered to be worst-case.

Acoustic modelling input data

Data sources used for this modelling are shown in **Table A.3**.

Table A.3 Data sources

Data	Source file	Origin
Nearby building locations	OS Buildings.geo	Ordnance Survey Vectormap
Site topography	CAD drawing entitled '221013 - LDX TIN_2.dwg'	Anglo American
Wider area topography	NZ80NW _DTM_2m.tif	Defra LiDAR survey data (available at Defra Survey Data Download)
Site layout	Rig Layout 2 - Zoomed	STRABAG

Acoustic model settings

Acoustic modelling was undertaken using the following model settings:

- Maximum search radius of 5000m.
- Maximum number of reflections: 3
- Noise predictions carried out at each floor level of sensitive receptors, ground floor level is 1.5m above ground, each storey is 2.5m high.
- Side diffraction enabled.
- Ground absorption was set as:
  Areas within site red line boundary and roads/haul routes within site set to G=0;
  Ground outside of site red line boundary set to G=1 (representing soft ground).

Plant details

The following Phase 9 equipment, associated sound power levels and conservative assumptions regarding plant 'on-times' were used within the SoundPLAN noise model:

General Site Use Equipment
1 x 13T Excavator, 10% 24 hours per day, 99dB L_{wA}
Delivery Vehicles, 3 per hour, 10 mph daytime only, 111dB L_{wA}
1 x Telehandler, 25% on-time 24 hours per day, 105dB L_{wA}
1 x Road Sweeper, 25% on time 24 hours per day, 104dB L_{wA}
45 ft MEWP, 10% on-time 24 hours per day, 95dB L_{wA}
1 x 20T Dumper, 25% on-time daytime only, 102dB LwA

General Site Activities Equipment
1 x 250kVa Generator (Welfare) (emergency situation only), 100% on-time 24 hours per day, 95dB L_{wA}
1 x 60kVa Generator (Siltbuster) (emergency situation only), 100% on-time 24 hours per day, 96dB L_{wA}
3 x Supersilent Pumps, 25% on-time 24 hours per day, 87dB L_{wA}
1 x Static Fuel Bowser, 50% on-time 24 hours per day, 101dB L_{wA}
1 x Towable Fuel Bowser, 25% on-time 24 hours per day, 101dB L_{wA}
1 x Towable Water Bowser, 25% on-time 24 hours per day, 101dB L_{wA}
1 x Towable Jet wash, 25% on-time Daytime only, 91dB L_{wA}
1 x 6m Ecowash Wheelwash, 25% on-time Daytime only, 91dB L_{wA}
1 x Siltbuster, 25% on-time 24 hours per day, 93dB L_{wA}

1 x 4kVa Mobile Generator (Workshop), 25% on-time 24 hours per day, 93 dB L_{wA}

Installation of Service Trenches and Walkways
2 x Tracked Excavator 20T, 50% on-time Daytime only, 101dB *L*wA
2 x Vibratory Roller, 25% on-time daytime only, 103 dB L_{wA}
2 x 20T Dumper, 60% on-time daytime only, 102dB *L*wA
1 x Telehandler, 50% on-time daytime only, 105dB *L*wA

Hardstanding Areas
1 x Dozer, 75% on-time daytime only, 105dB *L*wA
1 x Vibratory Roller, 50% on-time daytime only, 103dB *L*wA
1 x Asphalt Paver, 50% on-time daytime only, 112dB *L*wA
1 x 20T excavator, 10% on-time daytime only, 101dB *L*wA
1 x Asphalt Roller, 50% on-time daytime only, 108dB *L*wA
1 x Skid Steer, 50% on-time daytime only, 112 *L*wA

Assemble Equipment, Drill and Set 480' of 8" Surface Pipe and Drill 13,200 feet of 6.5" hole
1 x Auger or drilling rig (top drive), 75% on-time 24 hours, 105dB L_{wA}
1 x Auger or drilling rig (main body), 75% on-time 24 hours, 100dB L_{wA}
1 x M50E electrical compressor unit, 100% on time 24 hours, 98dB L_{wA}
1 x 30T Tracked excavator, 50% on time 24 hours, 103 dB L_{wA}
2 to 6 x 20T Tipper Trucks, Included in 'delivery vehicles'
1 x 30T Tracked excavator, 50% on time daytime only, 103 dB L_{wA}
1 x 20T Dumper, 60% on-time daytime only, 102 dB L_{wA}
1 x Vibratory Roller, 25% on-time daytime only, 103 dB L_{wA}
1 x Telehandler 5T, 50% on-time daytime only, 105 dB L_{wA}
1 x 60T Mobile Crane, 10% on time 24 hours, 105 dB L_{wA}
2 x 150 kVa Generator, 100% on time 24 hours, 98 dB L_{wA}
1 x 100kVa Generator, 100% on time 24 hours, 95 dB L_{wA}
1 x Centrifuge, 75% on time 24 hours, 104 dB L_{wA}
2 x Mud Pumps, 75% on time 24 hours, 98 dB L_{wA}
2 x Fluid Reclamation Units, 75% on time 24 hours, 98 dB L_{wA}
1 x Gas Separator Unit, 75% on time 24 hours, 98 dB L_{wA}
1 x 1000 kVa Power Module (Drilling Rig), 75% on time 24 hours, 105 dB L_{wA}

Decommissioning of old welfare and installation of new welfare
1 x 30T excavator, 100% on-time daytime only, 103dB *L*wA
1 x 20T Dumper, 60% on-time daytime only, 102dB *L*wA
1 x Telehandler 5T, 50% on-time daytime only, 105dB *L*wA
1 x Vibratory Roller, 25% on-time daytime only, 103dB *L*wA
1 x Concrete Pump, 75% on-time daytime only, 109dB *L*wA
2 x Vibratory poker, 25% on-time daytime only, 106 *L*wA
1 x 500kVa Emergency Generator 10% on-time 24 hours per day, 95dB *L*wA
1 x 130T mobile Crane, 50% on-time Daytime only, 105dB *L*wA
1x Compressor, 100% on-time daytime only, 107dB *L*wA

Operation of Tunnel Boring Machine (TBM) works and associated headhouse
1 x Alimak, 15% on-time 24 hours per day, 94dB *L*wA
1 x Ventilation Fan, 100% on-time 24 hours per day, 70dB *L*wA

Continuous Operation of Grout Plant
1 x Colloidal Mixer, 75% on-time 24 hours per day, 90dB *L*wA
1 x Agitator, 75% on-time 24 hours per day, 90dB *L*wA
2 x Grout Pump, 75% on-time 24 hours per day, 108dB *L*wA
1 x L290 Air compressor, 75% on-time 24 hours per day, 100dB *L*wA
1 x Agitator, 100% on-time 24 hours per day, 90dB *L*wA
1 x Chamber Filter Press Diaphragm Pump, 100% on-time 24 hours per day, 86dB *L*wA

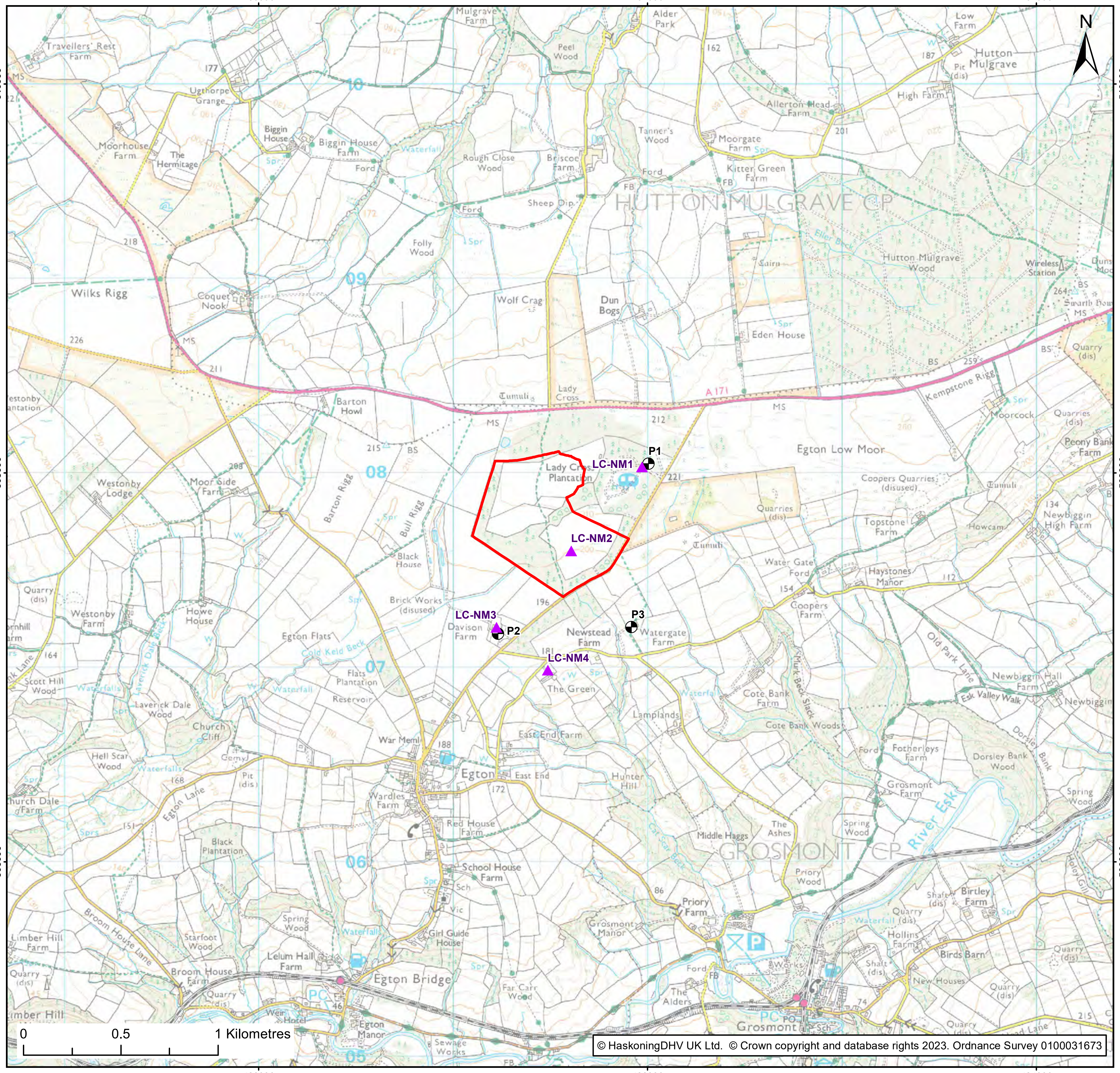
Emergency Flaring
1 x High Baffled Flare (7.62m) – Emergency Only, 100% on time 24 hours, 108 dB L_{wA}

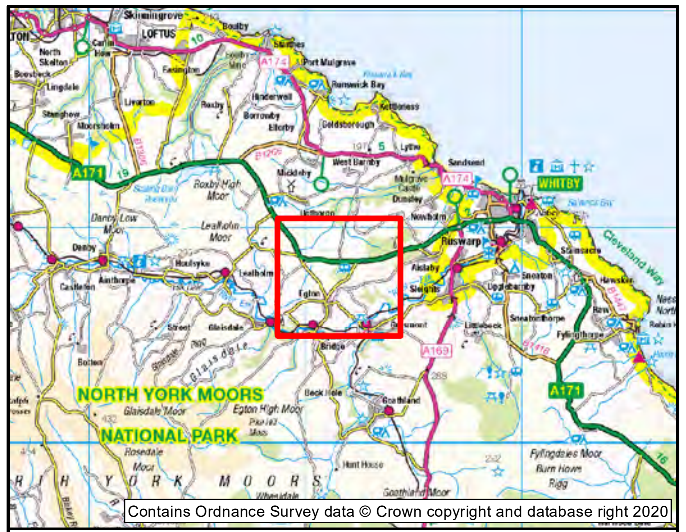
Table A.4 Predicted Distances at which Specific Vibration Levels Occur

Activity	Set-back distance at which vibration level (PPV) occurs			
	0.3 mm/s	1.0 mm/s	10 mm/s	15 mm/s
Vibratory compaction (start-up)	*116m**	65m	9m	6m
Vibratory compaction (steady state)	102m	44m	8m	6m
Vibratory piling (start-up)	*154m**	56m	8m	6m
Vibratory piling (steady state)	75m	32m	6m	5m
Tunnelling	*137**	54m	*9m**	*7m**
HGV movements on uneven haul route (assuming Alluvium surface)	277m	60m	3m	2m

Note These predicted distances are outside the limitations of the calculations and are therefore provided for information only.*

Appendix B Figures





Legend:

- Ladycross Freehold Boundary
- Monitoring locations
- Receptor Location

Client:	Project:
Anglo American	The Woodsmith Project

Title:

Residential Receptor Locations and Monitoring Locations for Ladycross Plantation Site

Figure:	Drawing No:
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Rev:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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Path: C:\Users\303011\Box\PB1110 Anglo American NYPP\E-TECHNICAL DATA\GIS\Figures\Figure_B1_LadyCrossReceptorLocations.mxd

Appendix C Acoustic Terminology

Term	Definition
Noise sensitive receptors	People, property or designated sites for nature conservation that may be at risk from exposure to noise and vibration that could potentially arise as a result of the proposed development/project
Noise and Vibration study area	The area assessed for noise and vibration impacts during this assessment
Baseline scenario	Scenarios with the proposed development/project not in operation
Decibel (dB)	A unit of noise level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 µPa, the threshold of normal hearing is 0dB, and 140dB is the threshold of pain. A change of 1dB is only perceptible under controlled conditions. Under normal conditions a change in noise level of 3dB(A) is the smallest perceptible change.
dB(A)	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
$L_{Aeq,T}$	The equivalent continuous sound level – the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.
$L_{A10,T}$	The A weighted noise level exceeded for 10% of the specified measurement period (T). L_{A10} is the index generally adopted to assess traffic noise
$L_{A90,T}$	The A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142:2014 it is used to define the 'background' noise level.
L_{Amax}	The maximum A-weighted sound pressure level recorded during a measurement.
PPV	Instantaneous maximum velocity reached by a vibrating element as it oscillates about its rest position.
'A' weighting	A frequency weighting to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Fast time constant	Sound level meters have two conventional time weightings, F = Fast and S = Slow with time constants of 125ms and 1000ms respectively. Fast time constant relates to the response time of the meter which allows rapid variations in noise level to be registered.

NYMNPA

16/02/2024

WOODSMITH PROJECT

(788.5030)

EMISSIONS TO ATMOSPHERE - PHASE 9 - NYMNPA CONDITION 91 - LADYCROSS PLANTATION

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(Royal HaskoningDHV)

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REPORT

NYMNPA-91 Emissions to Atmosphere

Ladycross Plantation Phase 9

Client: STRABAG AG

Reference: 40-STS-LC-2100-EN-PL-00043 REV 0

Status: 00/Final

Date: 14 February 2024

Royal HaskoningDHV
Enhancing Society Together

Royal HaskoningDHV
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Table of Contents

Table of Tables

Table of Figures

1 Introduction

1.1.1 In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to North York Moors National Park Authority (NYMNPA) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning consent was subsequently granted in 2015, subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA.

1.1.2 This document has been prepared on behalf of STRABAG AG, the contractor delivering the Phase 9 Works on behalf of Anglo American, and details the requirements with respect to emissions to atmosphere for the Phase 9 Works of the development at Ladycross Plantation (see paragraph 1.1.6 below). This document is required to partially discharge Condition 91 of the NYMNPA planning permission NYM/2017/0505/MEIA and has been prepared in accordance with current good practice. The planning condition states that:

"The final specification and configuration of generators to be employed at Doves Nest Farm and Ladycross Plantation, such to be fitted with Selective Catalytic Reduction (SCR), or other such emissions control measures as are necessary, will be submitted to the MPA for approval prior to commencement of their use. Results of air dispersion modelling will be submitted at the same time to verify that the identified configuration will lead to nutrient nitrogen and acid deposition at levels no greater than those that were demonstrated in the York Potash Environmental Statement (September 2014 as updated by the Supplementary Environmental Statement dated February 2015) as not leading to a significant effect on the integrity of the North York Moors SAC, SPA and SSSI."

1.1.3 The specific requirements of Condition NYMNPA-91 are detailed in **Table 1.1**.

Table 1.1 Condition NYMNPA-91 Emissions to Atmosphere

Condition NYMNPA-91	Compliance with Condition NYMNPA-91
The specification and configuration of generators and Selective Catalytic Reduction (SCR) / emission control measures.	Section 2
Confirmation that Phase 9 nutrient nitrogen and acid deposition rates are below those presented in the York Potash Environmental Statement (ES) and Supplementary Environmental Information Report (SEI).	Section 3

1.1.4 This assessment considers only the Phase 9 Works at Ladycross Plantation. Updates to this assessment will be prepared for subsequent construction phases and following any design review or method change. The approach adopted in this document was agreed with Natural England and NYMNPA for previous Phases at Woodsmith Mine.

1.1.5 The scope of Phase 9 described by this document is as follows:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant; and
- Installation and operation of Mines Rescue Facility.

2 Assessment

2.1.1 This assessment considers the impact of nutrient nitrogen and acid deposition from emissions arising from the Phase 9 Works. During Phase 9, an electrical grid supply will be in use on the site, which will be supplemented with additional diesel generation to ensure there is sufficient power for the proposed activities. As a proportion of the power requirement will be provided by electrical means, it was not considered that detailed dispersion modelling was necessary to undertake the assessment for this Phase of works. This document therefore presents a comparison of the power demand required during Phase 9, hours of working and duration, with the power demand and working hours presented within the York Potash Environmental Statement (ES) and Supplementary Environmental Information report (SEI) (Royal HaskoningDHV, 2014 and 2015), upon which the consented nutrient nitrogen and acid deposition values were based. The expected impact upon designated ecological sites was then evaluated.

2.1.2 A comparison of the atmospheric emission sources operating during Phase 9 with those considered in the York Potash ES and SEI (Royal HaskoningDHV, 2014 and 2015) is shown in **Table 2.1**.

Table 2.1 Comparison of Emission Sources between Phase 9 and the York Potash ES and SEI

Parameter	Phase 9	ES and SEI
Number of generators and capacity	1 x 60 kVA generator 1 x 4 kVA generator **64 kVA total**	7 x 1,290 kVA generators with SCR at 88% efficiency **9,030 kVA total**
Stack height	Approx. 2.5 m	30 m
Other emission sources	Road traffic Plant emissions	Road traffic Plant emissions Blasting emissions
Working hours	Some activities 7am to 7pm Other activities 24 hours a day	24 hours a day
Duration	132 weeks	26 weeks

2.1.3 As shown in **Table 2.1**, there is significantly less power generation capacity required during the Phase 9 Works in comparison to the level of generation assessed in the York Potash ES and SEI (<1%). In the ES and SEI, the generator emissions were assumed to be abated using Selective Catalytic Reduction (SCR) technology; given the lower power demand during Phase 9 in comparison to the ES and SEI assessment scenario, SCR or other emissions abatement technology is not considered to be required to mitigate impacts at designated ecological sites. In addition, the assessment presented in the ES and SEI included emissions from blasting which would not occur during Phase 9. The 60 kVA generator will be operated at 10% load for up to 24 hours per day as a worst-case scenario as back-up power to the siltbuster. In addition to this, a 4 kVA mobile generator will be used to power water management and will therefore be used only intermittently when this activity is required at a low load (10%). As such, emissions from the onsite generators will be very low. One additional generator, a 250 kVA emergency back-up (welfare) generator, will be on site in Phase 9 for emergency use. Whilst this generator will be routinely tested and maintained, as it will be used only in exceptional circumstances, emissions from this source were not included in this assessment.

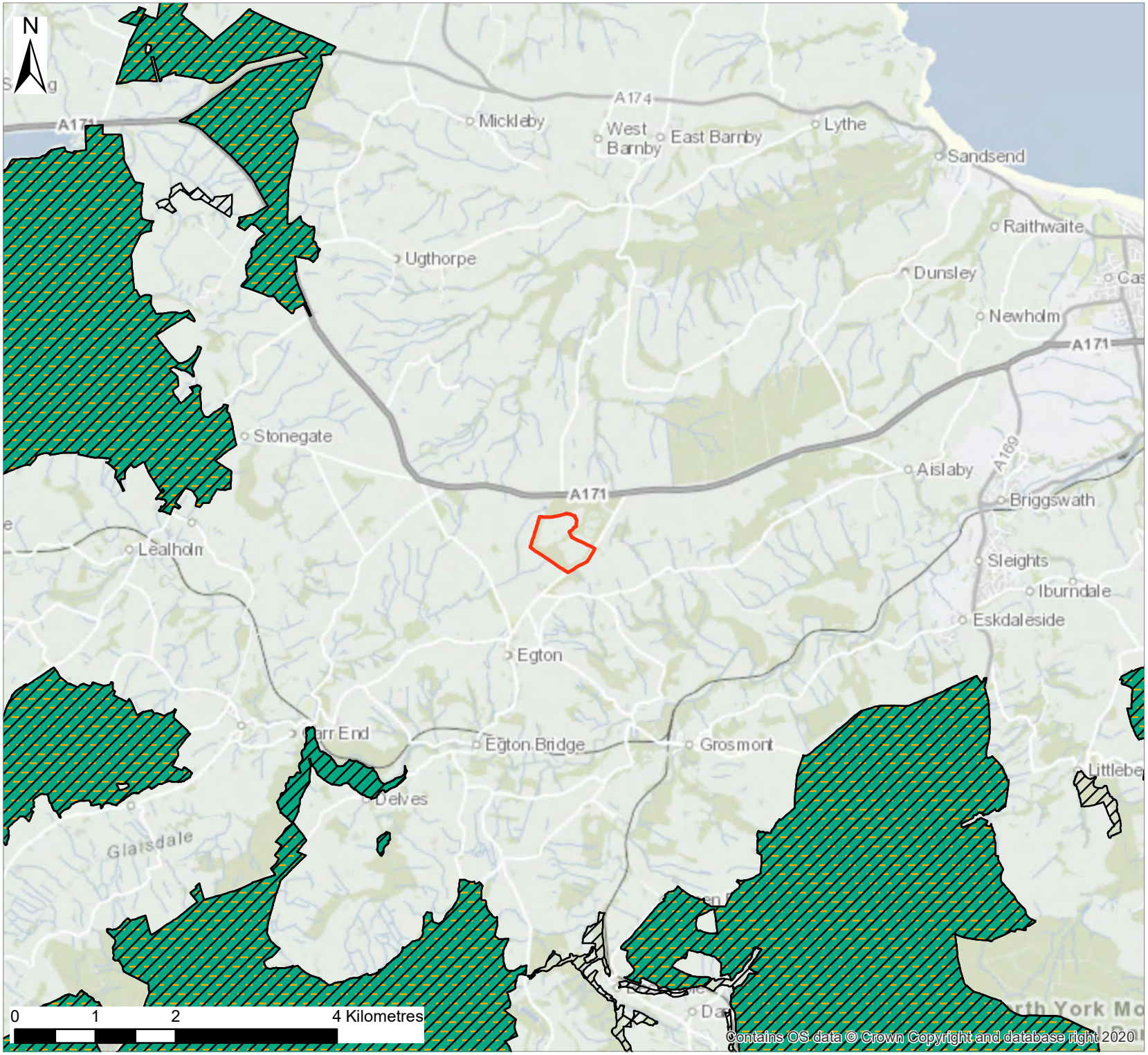
2.1.4 Whilst higher stack heights typically reduce off site effects by allowing greater dilution and dispersion of emissions before reaching receptors at ground level, they also carry pollutants across greater distances from the source. The lower stack heights utilised during Phase 9 will prevent emissions from dispersing further from the site towards designated habitats. As shown in **Figure 1**, the Ladycross Plantation site is situated at a distance from the North York Moors SAC and SSSI boundaries (3.5 km at its closest point). Whilst the total duration of diesel power usage at Ladycross Plantation has exceeded the six-month duration assessed in the ES and SEI, it is considered highly unlikely that emissions from the relatively small onsite generators would give rise to effects on designated sites given that emissions would be well dispersed and diluted across a 3.5 km distance. As such, emissions from plant and generators operating as part of the Phase 9 works would not lead to nutrient nitrogen and acid deposition of a greater magnitude than that presented in the ES and SEI at designated ecological sites.

2.1.5 If required, additional assessments will be carried out for future Phases of construction as the power demand at Ladycross Plantation increases.

3 Conclusions/Condition Discharge

3.1.1 This emissions to atmosphere assessment shows that emissions from the Phase 9 Works will result in no greater nutrient nitrogen and acid deposition at ecological receptors than those values presented in the ES and SEI. Additional mitigation controls are therefore not required for Phase 9.

3.1.2 The assessment thereby demonstrates that the requirements of Condition NYMNPA-91 are met.



Key:

- Lady Cross Plantation
- Special Protection Area
- Sites of Special Scientific Interest
- Special Area of Conservation

Title
Location of Lady Cross Plantation in relation to Designated Ecological Sites

Project
PB1110 Woodsmith Project

Client
STRABAG AG

Date	*Scale*
25/09/2023	1:65000

Figure
Figure 1

Checked by	*Number*
JD	1

Royal HaskoningDHV
Enhancing Society Together

NYMNPA

16/02/2024

WOODSMITH PROJECT

(788.5030)

CONSTRUCTION TRAFFIC MANAGEMENT PLAN - PHASE 9 - NYMNPA CONDITION 34 - LADYCROSS PLANTATION

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(Royal HaskoningDHV)

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REPORT

Phase 9 – Ladycross Plantation Construction Traffic Management Plan

Ladycross Plantation Phase 9 - CTMP

Client: STRABAG AG

Reference: 40-STS-LC-2100-LG-PL-00011 REV 0

Status: 0/Final

Date: 14 February 2024

Royal HaskoningDHV

Enhancing Society Together

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Table of Contents

Table of Tables

Table of Figures

Appendices

1 Introduction

1.1 Background

1.1.1 In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to the North York Moors National Park Authority (NYMNPA) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning permission was subsequently granted in 2015, subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA. The planning applications were supported by a series of documents which considered the impact and management of transport matters.

1.1.2 This document has been prepared on behalf of STRABAG AG, the Contractor delivering the Ladycross Plantation Phase 9 works, on behalf of Anglo American, and details the requirements with respect to traffic management for Phase 9 at Ladycross Plantation (see paragraph 1.1.4 below). This document is required to partially discharge condition 34 of the planning permission.

1.1.3 **Table 1-1** contains full details of condition 34 and how this document addresses the objectives.

Table 1-1 Condition NYMNPA-34 Construction Traffic Management Plan

Objectives	Condition	Compliance with Condition NYMNPA-34
Prior to the commencement of each Phase of Construction a Construction Traffic Management Plan (CTMP), based upon the submitted Framework Construction Traffic Management Plan dated February 2015 shall be submitted to, and approved in writing by the MPA [Mineral Planning Authority] in consultation with the appropriate Highway Authority. The approved CTMP shall be adhered to throughout the construction period unless otherwise agreed in writing with the MPA. The statements shall provide for:		-
Objective 1	The appointment of a CTMP co-ordinator	**Section 2**
Objective 2	Measures to control the number of employees travelling individually to the sites and their mode of travel	**Section 2**
Objective 3	The Traffic Management Liaison Group agreed level of HGV trips to the site	**Section 4**
Objective 4	Measures to identify HGVs associated with the development travelling to the construction sites	**Section 5**
Objective 5	The links to the Traffic Management Liaison Group	**Section 6**
Objective 6	Signing for HGV routes including prohibitive signing	**Section 7**
Objective 7	Accident record monitoring	**Section 8**
Objective 8	Driver training	**Section 9**
Objective 9	A communications plan	**Section 10**
Objective 10	A complaints mechanism	**Section 10**
Objective 11	An incident reporting mechanism including near misses	**Section 8**
Objective 12	A penalty system for breaches of the agreed CTMP	**Section 11**

1.1.4 The activities required for the Phase 9 Works comprise the following:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;
- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant; and

- Installation and operation of Mines Rescue Facility.

1.1.5 This CTMP considers the processes and controls with respect to all activities on site throughout Phase 9.

1.1.6 This CTMP has been prepared by Royal HaskoningDHV in liaison with STRABAG AG (the Contractor).

2 CTMP Co-ordinator (Objective 1)

2.1.1 Objective 1 of planning condition NYMNPA-34 requires the CTMP to set out the processes for the appointment of a CTMP co-ordinator.

2.1.2 Prior to the commencement of Phase 9, a CTMP co-ordinator (CTMPCo) will be appointed by the relevant Contractor for the duration of their respective phases. Their key responsibilities are as set out for previous phases (see Phase 3 CTMP, reference: 40-STS-LC-2100-LG-PL-00001) and in the action plan (**Appendix A**).

2.1.3 During Phase 9, the numbers of Contractors will change as discrete contracts (work packages) are completed/ commenced. Each Contractor will be required to appoint its own CTMPCo for their contract, and the CTMPCos will be required to collaborate to ensure that site-wide measures are co-ordinated and targets are met.

2.1.4 STRABAG AG has confirmed that for Phase 9, a member of the site-based team will undertake the role of the CTMPCo as part of their weekly responsibilities, with an adequate time allowance made for them to undertake this function.

2.1.5 Recognising that the CTMPCos will be appointed by Contractors working on discrete contracts only, Anglo American has developed the role of the Transport Co-ordinator (TCo) to take responsibility for the overall implementation of the CTMP. The TCo role was established initially for managing the works at Woodsmith Mine.

2.1.6 The TCo appointed by Anglo American to assist in the implementation and management of the CTMP for Woodsmith Mine will also act as the TCo for the Ladycross Plantation CTMP. This approach will help ensure co-ordination with ongoing works at Woodsmith Mine as well as allowing for lessons learnt to be shared.

2.1.7 The TCo role will cover the entire duration of the construction phase, including and beyond Phase 9. The TCo role will ensure continuity of the approach to traffic management, and co-ordinate efforts between the CTMPCos.

2.1.8 The TCo responsibilities remain as set out in previous CTMPs (see Phase 3 CTMP, 40-STS-LC-2100-LG-PL-00001) and in the action plan (**Appendix A**).

2.1.9 The relationships between the CTMPCos, TCo and other parties are shown in **Figure 2-1**.

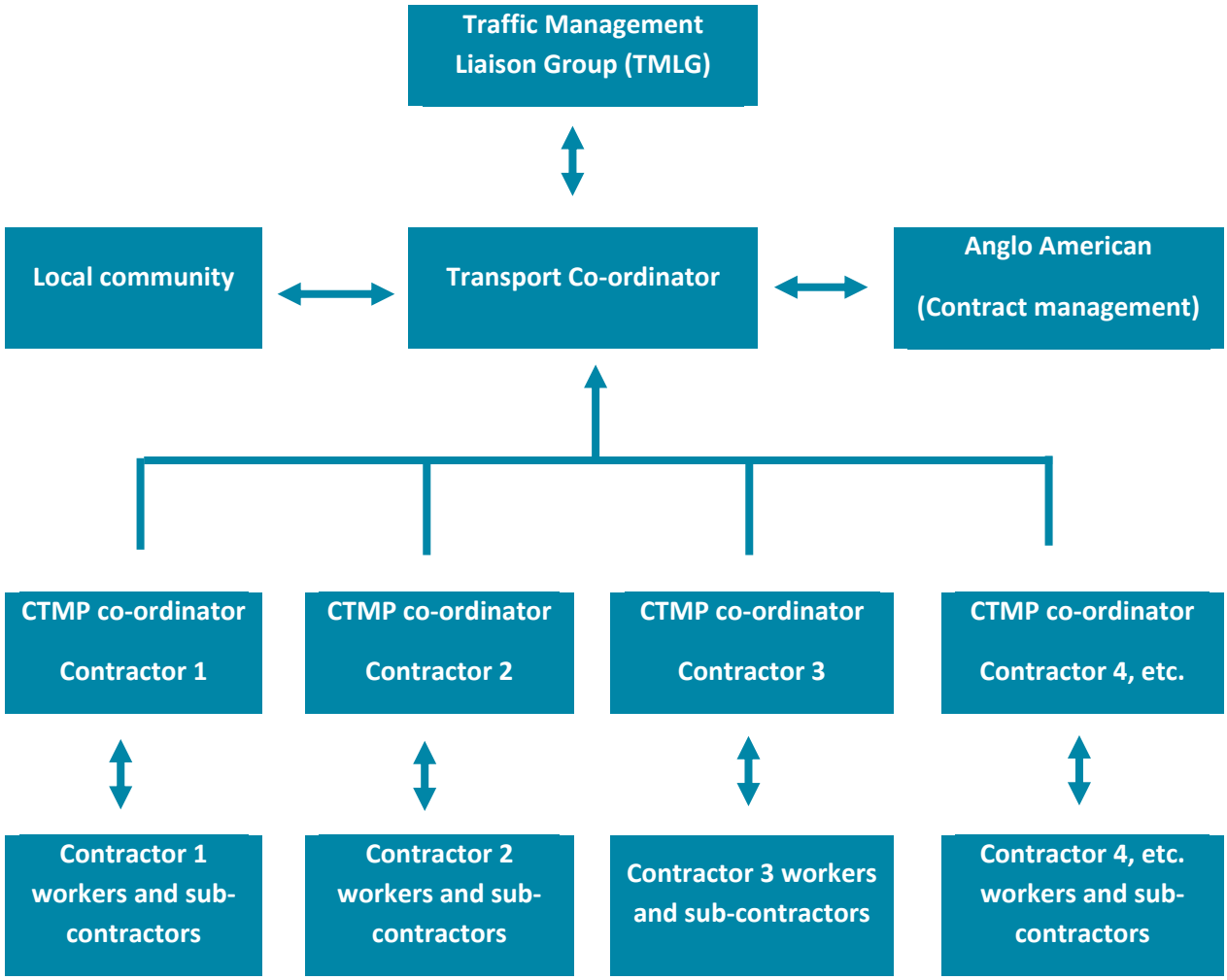


Figure 2-1 CTMP Management Structure

2.1.10 Full details of all the responsibilities of the CTMPCo and TCo, and associated Phase 9 timescales, are provided as an Action Plan in **Appendix A**.

2.1.11 Contact details for the CTMPCo and TCo will be submitted to North Yorkshire County Council (NYCC) Highways and the NYMNPA for their records prior to commencement of Phase 9.

3 Control of Personnel Movements (Objective 2)

3.1 Introduction

3.1.1 Objective 2 of planning condition NYMNPA-34 requires the CTMP to set out measures to control the number of employees travelling individually to the sites and their mode of travel.

3.2 Project Background

3.2.1 The Transport Assessment that supported the planning application recommended that, to reduce the impact of construction employee traffic on the highway network, a reduction in single occupancy car trips would be encouraged through the promotion of car-sharing and

limiting on-site car parking.

3.3 Target

3.3.1 The Transport Assessment that supported the planning application established that the likely peak employees at Ladycross Plantation would be 150, based on an understanding of the resourcing requirements for each activity. Utilising assumptions regarding employee origins, these 150 employee trips were then factored by a car-sharing ratio of 2.5, giving a maximum of 60 vehicle arrivals and 60 vehicle departures per day. This in turn led to a forecast peak of 120 two-way daily light vehicle movements. This provided the target for all previous CTMPs (i.e. up to and including Phase 8).

3.3.2 **Section 4.3** outlines a corresponding target for HGV movements per day of no more than 56 two-way HGV movements along the public highway from the A171 to site, (known as the C82). Combined, the targets permit up to 176 two-way vehicle movements per day to travel via the C82 to Ladycross Plantation.

3.3.3 For Phase 9, STRABAG AG has identified that there could be a requirement for additional light vehicle movements per day but correspondingly, there would be a requirement for fewer HGV trips. It is therefore proposed that for Phase 9 the adopted targets would be refined to:

- 140 two-way daily light vehicle movements per day; and
- 36 two-way daily HGV movements per day.

3.3.4 These refined targets would not result in an net increase in total daily vehicle movements above consented levels (176 two-way vehicle movements).

3.3.5 The following section sets out how this target for light vehicles will be achieved for the Phase 9 Works. This figure includes all ‘contract staff’ (i.e. Contractors and their associated sub-contractors and suppliers). The figure does not include any ‘non-construction’ staff (i.e. Anglo American managerial staff, statutory consultees etc.).

3.4 Measures

3.4.1 STRABAG AG has confirmed that for Phase 9, the numbers of employees based at Ladycross Plantation per day will peak at approximately 100 people over two shifts (i.e. 50 per shift) during the shift changeover, equivalent to 200 two-way employee movements.

3.4.2 In addition to the employees working at Ladycross Plantation, there will also be some staff who need to travel to different locations throughout the day (e.g. onwards to Woodsmith Mine and requirements for deliveries by light vehicles; approximately five visits per day).

3.4.3 Noting the target of 140 two-way daily light vehicle movements and the forecast of 200 to 210 two-way staff movements per day, it is demonstrated that there would be a requirement to implement travel planning measures to achieve an employee to vehicle ratio of approximately 1.5 employees per vehicle.

3.4.4 To achieve this target the Contractor will primarily utilise a multi-occupancy vehicle strategy. This strategy will allow some employees to drive direct (either single occupancy or car-sharing), whilst providing scheduled shuttle bus/ minibus services from pre-arranged locations to Ladycross Plantation for others (e.g. employee accommodation centres).

3.4.5 **Table 3-1** provides details of the key mechanisms (and the rationale for the measures) that will be adopted for Phase 9. Many of the measures outlined in **Table 3-1** were implemented for previous phases at Ladycross Plantation to embed best practice travel planning measures at the site (see Table 3-1 of the Phase 3 CTMP, 40-STS-LC-2100-LG-PL-00001).

Table 3-1 Employee Travel Plan Measures

Objectives	Condition
Access Passes (AP)	Limiting access to site will be the principal vehicle control mechanism. The management processes that will be adopted are: • APs will be issued for pre-authorised vehicles; • No vehicles to enter the site without an AP; • Upon completion of their employment, workers will be required to surrender their AP; • The TCo will maintain a register of APs that will also list the relevant CTMPCos associated with the vehicle; and • The number of APs issued to each CTMPCo will be monitored and controlled by the TCo in order to help ensure compliance with the overall vehicle movement allocations.
Visitor access	There will be visitors outside the employment of the Contractor and Anglo American who will require access to Ladycross Plantation. These visitors will be provided with a temporary AP at the security gate and required to surrender their AP upon leaving.
Identify car-share, minibus pickup locations	The CTMPCo will identify those employees who are in nearby accommodation and could conceivably car-share or be transported direct to the Ladycross Plantation site by minibus. Where car-sharing or minibus provision is feasible, the CTMPCo will assign designated drivers and occupants.
Satellite transport hubs	The TCo will identify opportunities to establish satellite transport hubs outside of the NYMNPA from where employees would be permitted to park before being transferred to the Ladycross Plantation site by minibus.
Restricted access to site by foot	To prevent employees driving close to Ladycross Plantation and parking on the highway verge etc. and then walking into the site, personnel will not be permitted to enter the site on foot unless by prior arrangement with a CTMPCo (for instance, for genuine walking trips).

3.5 Objective 2 Monitoring

3.5.1 The vehicle movements associated with the Phase 9 Works will be monitored by security personnel at the site entrance. In addition, the Contractor has confirmed that all workers and visitors will be required to sign in to and out of the site. This process will also capture an employee's method of travel and will serve to augment the 'gate counts' to give a complete evidence base.

3.5.2 Data from the site access and sign in sheets will be collated by the CTMPCo. This will ensure that non-compliances are identified at an early stage and any necessary remedial action taken promptly.

4 Control of HGV Movements (Objective 3)

4.1 Introduction

4.1.1 Objective 3 of planning condition NYMNPA-34 requires the CTMP to set out the Traffic Management Liaison Group (TMLG) agreed level of HGV trips to the site.

4.2 Project Background

4.2.1 The HGV traffic generation that informed the planning application was derived by way of a 'first principles' approach. This generates traffic volumes from an understanding of material quantities and personnel numbers, informed by industry experienced consultants.

4.2.2 The application identified that, of the potential suppliers within the study area, Teesside was the most likely source for all materials. As such, it was assumed that all HGV trips will have an origin and destination in that region utilising the A171 corridor to access the site (via the section of public highway known as the C82 to the north to avoid Egton).

4.2.3 **Appendix B** (reproduced from the Transport Assessment that accompanied the planning application) illustrates that to the west of Whitby a peak of 168 daily two-way HGV movements would be forecast to travel along the A171 towards Teesside (within the administration area of NYCC Highways). These 168 two-way HGV movements were forecast to originate from the Woodsmith Mine and Ladycross Plantation sites.

4.2.4 **Appendix B** also details that 126 daily two-way HGV movements can travel via the A171 (through Whitby) and the B1416 to Woodsmith Mine and 56 daily two-way HGV movements can travel via the C82 to the Ladycross Plantation site.

4.2.5 **Section 3.3** of this CTMP however outlines that for Phase 9, STRABAG AG has identified the need to permit more light vehicles to the Ladycross Plantation site and correspondingly to limit the number of HGV movements (36 two-way HGV movements per day).

4.2.6 It can be calculated that with the revised HGV limits along the C82 that 'in-combination', peak deliveries to both Ladycross Plantation and Woodsmith mine (126 + 36 = 162 two-way HGV movements) would not exceed the maximum assessed on the A171 west of Whitby.

4.2.7 All deliveries were considered to occur within a 12-hour window (7am to 7pm), Monday to Saturday, with Sunday reserved for incidental deliveries equivalent to three deliveries to Ladycross Plantation (also between 7am and 7pm).

4.3 Objective 3 Target

4.3.1 To meet objective 3, the starting point for controlling HGV movements is to define a target for the maximum number of daily HGV trips.

4.3.2 The primary target is to manage a daily profile of no more than 36 two-way HGV movements (18 in and 18 out) to and from the Ladycross Plantation site.

4.4 Objective 3 Measures

Control of HGV Numbers

4.4.1 To ensure that the Contractors can comply with the target for HGV movements, a Delivery Management System (DMS) has been developed and operates as set out in previous versions of the CTMP (see Phase 3 CTMP, reference: 40-STS-LC-2100-LG-PL-00001).

Network Resilience

4.4.2 To reduce the potential for the Phase 9 construction traffic to have an adverse impact upon the highway network during planned and unplanned events, a number of measures are being implemented across the project (see Table 4-1 of the Phase 3 CTMP reference: 40-STS-LC-2100-LG-PL-00001).

Control of Abnormal Loads

4.4.3 The movement of abnormal loads will be outside of the restrictions contained within this CTMP and is subject to separate agreement with the relevant highway authorities and police through the Electronic Service Delivery for Abnormal Loads system (ESDAL). The preferred route, unless otherwise agreed through the ESDAL process, is for vehicles to travel from the wider A road network along the A171 to access the site (via the C82 from the north to avoid Egton).

4.4.4 STRABAG AG has confirmed that for Phase 9, approximately 10 abnormal load deliveries will be required. Prior to the movement of any abnormal load the Contractors will notify stakeholders through ESDAL and agree timing and routes with the relevant highway authorities and police.

4.5 Objective 3 Monitoring

4.5.1 Vehicle movements associated with the Phase 9 Works will be monitored by the security guard at the site access.

4.5.2 Anglo American's bespoke DMS augments the traffic counts to give a complete evidence base.

4.5.3 Data from the site access and DMS will be collated by the CTMPCo. This will ensure that any issues are identified at an early stage and dealt with promptly.

5 Monitoring Strategy (Objective 4)

5.1.1 Objective 4 requires the CTMP to set out measures to identify HGVs associated with the development travelling to the construction sites.

5.1.2 Development traffic will be routed away from the most sensitive areas, such as Egton. To help the public distinguish construction traffic from other traffic on the network, and thereby effectively report any concerns, each HGV travelling to and from Ladycross Plantation will be required to display a unique identifier within the window of the vehicle. It is proposed that

similar to the CTMP for Woodsmith Mine, the Anglo American logo (**Figure 5-1**) will be used.

Figure 5-1 Unique vehicle identifier

5.1.3 The Contractor has also confirmed that all of their fleet, and the majority of their suppliers' fleets, are fitted with GPS tracking.

5.1.4 The GPS tracking and DMS will serve to augment the Unique Identifier to allow the CTMPCos to respond to any complaints.

6 CTMP Management Structure (Objective 5)

6.1 Introduction

6.1.1 Objective 5 requires the CTMP to set out the project's links to the TMLG.

6.1.2 A management structure has been developed by Anglo American to oversee the implementation of the CTMP, and the monitoring and enforcement of construction traffic movements for Woodsmith Mine and Ladycross Plantation.

6.2 Purpose

6.2.1 The purpose of the TMLG is to facilitate liaison between Anglo American, planning authorities, highways authorities and other key stakeholders in relation to the transportation aspects of the construction and operation of the Project. Its role, responsibilities and membership remain as set out in the Phase 3 CTMP (reference: 40-STS-LC-2100-LG-PL-00001).

6.3 Frequency and Duration

6.3.1 Meetings will be held on a quarterly basis (or as otherwise agreed by attendees of the TMLG). There will be a formal review of the membership of the group and the timing of meetings every five years.

6.3.2 The TMLG will remain in existence for the operational lifetime of the Project Secretariat.

6.3.3 Notice will be given to attendees at least two weeks before any proposed meeting.

6.3.4 The TCo will act as Chair of the TMLG and will nominate a substitute in their absence. Anglo American will provide secretariat support for the TMLG including sending invitations, taking

minutes and distributing meeting papers to TMLG members and other agreed recipients before and after meetings.

6.4 Outputs

6.4.1 Outputs from the TMLG in Phase 9 will be consistent with those in earlier phases, as set out in the Phase 3 CTMP (reference: 40-STS-LC-2100-LG-PL-00001).

6.5 Scope

6.5.1 The remit of the TMLG is to ensure compliance with transport conditions/ consents established by the planning permission. This does not extend to reviewing matters established or agreed by the grant of the planning permission.

6.5.2 The TMLG can make recommendations to Anglo American and the NYMNPA but it does not have any legal enforcement or decision-making role per se, nor will it override, interfere with or impede the legal mechanisms in place for the implementation of the development through the planning conditions and the Section 106 Agreement.

6.5.3 Issues relating to traffic that are raised by the Local Group Forum (detailed further within the Phase 3 CTMP reference: 40-STS-LC-2100-LG-PL-00001), which will also be chaired by Anglo American and is open to local residents to attend, will be forwarded to the TMLG to consider and report back.

6.5.4 Matters relating to the safety of the travelling public which require immediate attention will be dealt with through the existing powers of the Local Highway Authorities and the Police. Where related to the matters within the remit of the group these will be reported back to the group.

7 HGV Route Compliance (Objective 6)

7.1.1 Objective 6 of planning condition NYMNPA-34 requires the CTMP to set out signing for HGV routes, including prohibitive signing.

7.1.2 To ensure that HGVs use the designated haul routes, signing has been installed (during Phase 1) to direct construction traffic from the A171 along the C82 to Ladycross Plantation via the agreed delivery route. This signing will be maintained for the entire construction duration, including Phase 9 and subsequent phases.

7.1.3 To support the signing strategy, delivery routes will be communicated to all individuals and companies involved in the transport of materials and plant to and from the Ladycross Plantation site by the CTMPCos.

7.1.4 The routes will be communicated through the issuing of information packs. The packs will be a convenient size so they can be stored in a truck cab and include key information on:

- The unique identifier to display in the window, **Section 5** refers;
- A plan showing the delivery route as defined in **Section 4**;
- Details of procedures for dealing with emergencies as detailed in **Section 4**;

- Details of driver training requirements, **Section 9** refers; and
- Details of disciplinary measures for non-compliance, **Section 11** refers.

7.1.5 A template pack is provided as **Appendix C**.

8 Managing Road Safety (Objectives 7 & 11)

8.1 Introduction

8.1.1 Objective 7 requires the CTMP to set out a strategy for accident record monitoring.

8.1.2 In addition to objective 7, objective 11 requires the CTMP to set out an incident reporting mechanism including near misses.

8.2 Background

8.2.1 During the development of the Transport Assessment (that supported the planning application) a detailed review of the baseline road safety record within the study area was undertaken to ascertain the potential for construction traffic to exacerbate existing trends.

8.2.2 Anglo American proposed that rather than contribute towards preventative measures which are not guaranteed to address future road safety trends, a more appropriate solution would be to monitor and review accident trends during the construction programme in collaboration with NYCC Highways. This approach was agreed by NYCC Highways.

8.3 Objectives 7 & 11 Measures and Reporting

8.3.1 STRABAG AG has identified that on all of their projects they operate near miss reporting systems. This includes highways incidents. The Contractor will therefore ensure that all accidents and near misses are recorded within this system and that drivers are reminded to report all issues through inductions and within the delivery instructions.

8.3.2 Any accidents or near misses will be recorded, investigated, and reported to transport stakeholders via the TMLG.

8.3.3 If emerging issues are identified, proposals will be put to the TMLG and, if approved, funding will be made available to implement targeted mitigation under an agreement with Anglo American.

8.3.4 It is anticipated that intervention will not entail ‘hard’ highway engineering solutions; rather the focus is to be applied to education, training, and publicity. The types of mitigation that could be employed include:

- Additional police enforcement (e.g. extra mobile cameras on the A171);
- Public awareness of the dangers of overtaking;
- Training – e.g. funding some Pass Plus driving courses aimed at new drivers; and
- Driver training – e.g. making all construction phase drivers aware of specific risks, issues (**Section 9** refers).

8.3.5 Pursuit of mitigation and other initiatives to improve road safety is the responsibility of the TMLG, the Project, Anglo American and the Contractors as promoters of a Zero Harm Culture.

9 Driver Training (Objective 8)

9.1.1 Objective 8 of planning condition NYMNPA-34 requires the CTMP to set out a strategy for driver training. The scope of the driver training in Phase 9 will be consistent with that detailed for earlier phases, as set out in the Phase 3 CTMP (reference: 40-STS-LC-2100-LG-PL-00001).

10 CTMP Communication Procedures (Objectives 9 & 10)

10.1 Introduction

10.1.1 Objective 9 requires the CTMP to set out a Communications Plan. In addition, Objective 10 requires the CTMP to set out a Complaints Mechanism.

10.2 Communications

10.2.1 Anglo American has developed a Community and Stakeholder Engagement Framework (CSEF) which aims to set out a clear communications approach during the construction period. The full CSEF is provided as an appendix to the Phase 9 CEMP (reference: 40-STS-LC-2100-EN-PL-00040).

10.3 Reporting

10.3.1 In addition to attending the TMLG, the TCo (with input and support from the CTMPCos) will also be responsible for producing a monthly monitoring report. The monitoring reports will be structured as during previous phases (see Phase 3 CTMP, reference: 40-STS-LC-2100-LG-PL-00001).

10.4 Complaints

10.4.1 Anglo American has developed a procedure for managing complaints from receipt through to resolution. All complaints, regardless of the source, will be managed by the Anglo American External Affairs team and will involve the Company's Project team, Contractors and other parties as appropriate. The procedures for managing complaints remain the same as for earlier phases (see Phase 3 CTMP, reference: 40-STS-LC-2100-LG-PL-00001).

11 Enforcement (Objective 12)

11.1.1 Objective 12 of planning condition NYMNPA-34 identifies that the CTMP should include a penalty system for breaches of the agreed CTMP.

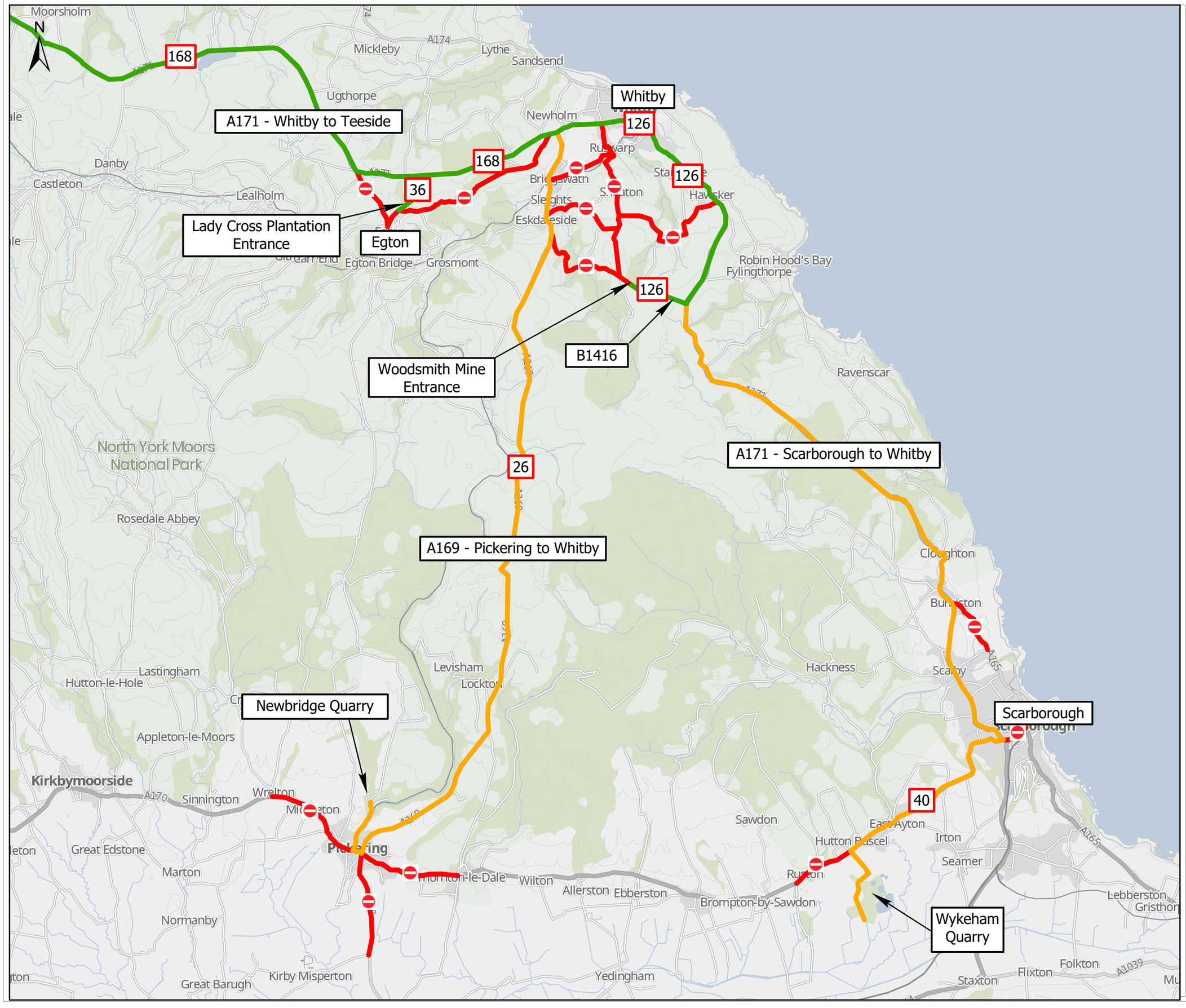
11.1.2 The mechanisms to ensure that the CTMP is effectively enforced remain the same as for earlier phases (see Phase 3 CTMP, reference: 40-STS-LC-2100-LG-PL-00001).

Appendix A CTMP Co-ordinator responsibilities & Timescales

Appendix A – Phase 9 CTMP Action Plan

Measure	Timescale	Responsibility
Appoint/Re-appoint Transport Co-ordinator (TCo)	Prior to commencement of Phase 9	Anglo American
Appoint Construction Traffic Management Plan Co-ordinator (CTMPCo)	Prior to commencement of Phase 9	Contractor
Issue delivery packs to all suppliers	Ongoing throughout construction	CTMPCo
Issue parking passes to employees	Ongoing throughout construction	CTMPCo
Undertake toolbox talks including topic such as safe driving	Ongoing throughout construction	CTMPCo with specialist support
Monitoring of CTMP including: - HGV movements - Employee parking - Accidents and near misses - Complaints	Ongoing throughout construction	CTMPCo
Produce Monitoring Reports	Monthly throughout construction	TCo
Undertake site induction for new starters including information on: - details of restrictions on walking to site - details of parking restrictions	Ongoing throughout construction	CTMPCo
Meet with the TMLG	On-going throughout construction	CTMPCo, TCo and Anglo American

Appendix B Peak Daily HGV Movements



Legend

- Permitted HGV Routes
- Permitted Aggregate Supply Routes
- Routes Not Permitted
- 126 Maximum Daily Two-Way HGV Trips

Title
HGV Routes and Peak Daily Movements

Project
Woodsmith Mine

Client
Anglo American Woodsmith Ltd.

Date	*Scale*
15/12/2020	1:125,000

Appendix B

Drawn by	*Checked by*
LM	ST

Royal HaskoningDHV
Enhancing Society Together

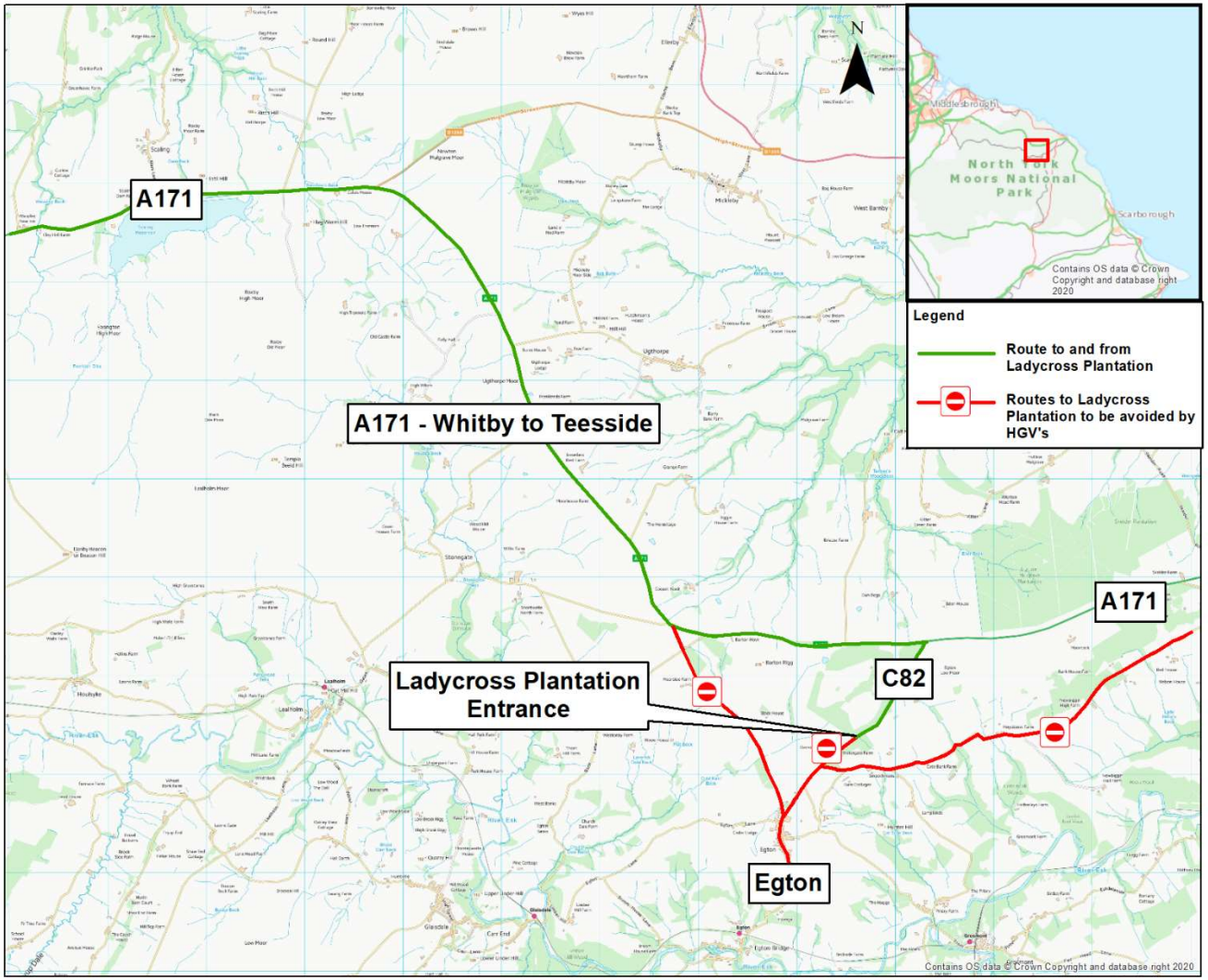
Path: C:\Users\305248\Documents\ArcGIS\Projects\Woodsmith Mine\Woodsmith Mine.aprx

Appendix C Delivery Pack Template

FAILURE TO DISPLAY THIS IDENTIFIER WOULD CONSTITUTE A BREACH OF CONTRACT RESULTING IN DISCIPLINARY ACTION

Ladycross Plantation

Delivery Instructions



Emergency Contact Information:

- Breakdown Assistance
  [Insert Recovery Company No.]
- Site Manager
  [Insert Site Manager No.]

Delivery Hours: 07:00 – 19:00

(No admittance before or after these hours)

Before You Depart:

- Familiarise yourself with the defined haul routes for (shown in figure to left).
- Ensure that your unique identifier is displayed in the cab windscreen.
- Ensure that you have your Driver Qualification Card (must be presented to [xx] when delivering to site).

On Route:

- Comply with speed limits
- Follow the defined haul routes
- Record any accidents or near misses

Upon Arrival:

- Present your Drive Qualification Card to [xx]
- Make [xx] aware of any accidents or near misses on route
- Provide delivery receipts to [xx]

FAILURE TO COMPLY WITH THESE INSTRUCTIONS WOULD CONSTITUTE A BREACH OF CONTRACT RESULTING IN DISCIPLINARY ACTION

NYMNPA

16/02/2024

WOODSMITH PROJECT

(788.5030)

CONSTRUCTION VEHICLE & PLANT MANAGEMENT PLAN - PHASE 9 - NYMNPA CONDITION 92 - LADYCROSS PLANTATION

/

40-STS-LC-2100-LG-PL-00012

(Royal HaskoningDHV)

Revision	Date of issue	Prepared by	Checked by	Approved by	Changes
B (PLA)	09/02/2024	IOM (RHDHV)	JD (RHDHV)	JD (RHDHV)	

REPORT

NYMNPA-92 Construction Vehicle and Plant Management Plan

Ladycross Plantation Phase 9

Client: STRABAG AG

Reference: 40-STS-LC-2100-LG-PL-00012 Rev 0

Status: 00/Final

Date: 14 February 2024

Royal HaskoningDHV

Enhancing Society Together

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Document title: NYMNPA-92 Construction Vehicle and Plant Management Plan

Document short title: Ladycross Plantation Phase 9 CVPMP
Reference: 40-STS-LC-2100-LG-PL-00012 Rev 0
Status: 00/Final
Date: 14 February 2024
Project name: Woodsmith Project
Project number: PB1110
Author(s): CG, IOM

Drafted by: IOM

Checked by: JD

Date: 05/02/2024

Approved by: JD/IJ

Date: 05/02/2024

Classification
Project related

Royal HaskoningDHV

Table of Contents

Table of Tables

Figures

Appendices

Figures

1 Introduction

1.1.1 In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to North York Moors National Park Authority (NYMNPA) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning permission was subsequently granted in 2015, subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA.

1.1.2 This document has been prepared on behalf of STRABAG AG, the contractor delivering the Phase 9 Works on behalf of Anglo American, and details the requirements with respect to construction vehicles and plant for Phase 9 of the development at Ladycross Plantation (see paragraph 1.1.5 below). This document is required to partially discharge Condition 92 of the NYMNPA planning permission NYM/2017/0505/MEIA and has been prepared in accordance with current good practice. The planning condition states that:

"Prior to the commencement of each Phase of Construction at either Dove's Nest Farm or Ladycross Plantation, a Construction Vehicle and Plant Management Plan (CVPM) shall be submitted to and approved in writing by the MPA. The CVPM shall include details of monitoring locations and baseline particulate emissions; predicted traffic movements into/out of the sites including levels at the A171/Mayfield junction; predicted particulate emissions from plant and HGVs during the construction period; proposed particulate control levels; proposed avoidance or mitigation measures to comply with control levels, and arrangements for monitoring over the construction period. Development shall only occur in strict accordance with the measures set out in the CVMP [sic]*, unless otherwise agreed in writing with the MPA."*

1.1.3 The specific requirements of the planning condition are detailed in **Table 1-1**.

Table 1-1 Condition NYMNPA-92 Construction Vehicle and Plant Management Plan

Condition NYMNPA-92	Compliance with Condition NYMNPA-92
Details of monitoring locations and baseline particulate emissions	Section 2
Predicted traffic movements into/out of the sites including levels at the A171/Mayfield junction	Section 3
Predicted particulate emissions from plant and Heavy Goods Vehicles (HGVs) during the construction period	Section 4
Proposed avoidance or mitigation measures to comply with control levels	Section 5
Proposed particulate control levels	Section 5
Arrangements for monitoring over the construction period	Section 2

1.1.4 This management plan details only the Phase 9 Works at Ladycross Plantation. Updates to this plan will be prepared for subsequent construction phases (as required) and following any design review or method change. The NYMNPA has confirmed that it supports this approach.

1.1.5 The activities required for the Phase 9 Works comprise the following:

- Construction and use of Adit connection to the Mineral Transport System (MTS) shaft;

- Tunnel boring support works;
- Installation of service trenches and walkways;
- Operation of grout plant; and
- Installation and operation of Mines Rescue Facility.

1.1.6 This document follows the approach that has been agreed with officers in respect of previous CVPMPs submitted for Woodsmith Mine.

2 Baseline Conditions

2.1 Definitions of Dust and Fine Particulate Matter

2.1.1 Definitions of dust and fine particulate matter are provided in **Appendix A1**.

2.2 Site-Specific Dust Deposition Survey

2.2.1 Baseline dust deposition monitoring was not undertaken at Ladycross Plantation as part of the Environmental Statement (ES) which supported the planning application. As such, there are no historical baseline datasets at the site.

2.2.2 Dust deposition monitoring is now undertaken at four locations around the site, as shown in **Figure 1**, which will continue throughout the construction works.

2.2.3 Wind roses of hourly sequential meteorological data from the Fylingdales recording station were provided in the ES[1]. The predominant wind direction is from the south-west, and locations downwind of particulate sources are likely to experience the greatest deposition.

2.2.4 Regulatory authorities conventionally consider a threshold of 200 mg/m^2/day[2,3] to be the dust deposition rate above which complaints are likely[4]. It is expected that, given the nature of the area and that the ground has a covering of vegetation, baseline dust deposition rates would be below 200 mg/m^2/day. This would be expected in a rural and relatively undeveloped location.

2.3 Background Particulate Matter Concentrations

2.3.1 Background PM_{10} and $PM_{2.5}$ concentrations were sourced from pollutant maps provided by Defra[5] for a 1 km x 1 km resolution of the UK. The relevant 2024 background pollutant concentrations at Ladycross Plantation were obtained for the grid squares covering the area, and are detailed in **Appendix A2**.

2.3.2 Background PM_{10} and $PM_{2.5}$ concentrations at Ladycross Plantation are well below the annual mean Air Quality Objectives (in England) of 40 µg.m^{-3} and 20 µg.m^{-3} respectively. The main contributor to PM_{10} concentrations within the above grid squares is secondary PM_{10} (aerosols formed in atmospheric condensation reactions), sea salt and calcium and iron rich dusts, reflecting the proximity of Ladycross Plantation to the coast.

[1] Royal HaskoningDHV (2014) York Potash Project Mine, MTS and MHF Environmental Statement: Part 2 Chapter 9 Air Quality
[2] Environment Agency (2013) Technical Guidance Note (Monitoring) M17 Monitoring Particulate Matter in Ambient Air around Waste Facilities
[3] Institute of Air Quality Management (2016) Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites
[4] Vallack & Shillito (1998) Suggested guidelines for deposited ambient dust, Atmospheric Environment **16** (32), 2737-2744
[5] Defra (2020) 2018-based background maps https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018

2.4 Additional Monitoring

2.4.1 Construction activities will be subject to a range of dust and vehicle management measures, as set out in the Construction Environmental Management Plan (CEMP), submitted to partially discharge planning condition NYMNPA-93. The measures detailed in the CEMP include regular visual site inspections to monitor compliance with dust control procedures set out within the document. The results of the inspections will be recorded within the site log book, and included in monthly reporting. Details around dust management are included within the Phase 9 CEMP, and within the Phase 3 Dust Management Plan which remains applicable for this Phase.

2.4.2 The programme of site inspections will assist with interpretation of the results of the ongoing dust deposition monitoring which will be undertaken throughout the construction works, and which will provide retrospective information about dust levels generated during construction to inform site management practices.

3 Predicted Traffic Movements and On-Site Plant Associated with Phase 9 Works

3.1.1 The total duration of Phase 9 is 132 weeks. This total duration, however, comprises several discrete construction activities of varying duration, and the breakdown and indicative timescales are described further below:

- Activity 1: Construction and use of the Adit connection to the MTS shaft
  - 11 week duration – Week 15 to Week 25 (inclusive).
  - STRABAG AG advises that this will be sporadic and focused on certain activities, therefore the programme represents the worst case scenario.
  - All activities underground.
- Activity 2: Tunnel boring support works
  - 107 week duration – Week 26 to Week 132 (inclusive)
- Activity 3: Installation of service trenches and walkways
  - 4 week duration – Week 1 to Week 4 (inclusive)
  - The installation of blacktop (listed as 'Surface Works' in **Table 3-2**) will be undertaken in parallel with this activity.
- Activity 4: Operation of grout plant
  - 107 week duration - Week 26 to Week 132 (inclusive)

3.1.2 The end of Phase 9 will be when the tunnel boring machine (TBM) reaches Woodsmith Mine, which is estimated to be in 2026 (Week 132).

3.2 Construction Phase Road Traffic Movements

3.2.1 The anticipated traffic movements associated with Phase 9 align with the targets for vehicle movements presented in the Construction Traffic Management Plan (CTMP), submitted to partially discharge planning condition NYMNPA-34, and are based on the peak number of movements permitted at Ladycross Plantation. The Phase 9 Works are assumed to be undertaken over a 132 week period, totalling approximately 924 working days. For Phase 9, STRABAG AG has identified that there could be a requirement for additional light vehicle movements per day but correspondingly, there would be a requirement for fewer HGV trips. These refined targets would not result in a net increase in total daily vehicle movements above consented levels. It is expected that the Phase 9 Works would not generate the peak number of permitted vehicle movements; the assessment is therefore conservative.

3.2.2 The number of traffic movements generated during the Phase 9 Works is detailed in **Table 3-1**.

Table 3-1 Traffic Movements Generated During Phase 9 at Ladycross Plantation

Vehicle Type	Number of Vehicles During Phase 9 (Two-Way)*	Maximum Number of Vehicles per Day (Two-Way)
HGV	29,304	36
Light Goods Vehicles (LGVs)**	129,360	140
**HGVs are restricted on Sundays and therefore the total number of HGVs during Phase 9 does not equate to the duration multiplied by the number of HGVs per day*		

Vehicle Type	Number of Vehicles During Phase 9 (Two-Way)*	Maximum Number of Vehicles per Day (Two-Way)
***Includes cars, minibuses and vans*		

3.2.3 As the primary source of construction materials within the area will be from Teesside, no HGVs would travel through the A171/Mayfield junction. It is expected that, based upon forecast employee distribution, there would be a negligible increase in traffic movements through the A171/Mayfield junction.

3.3 On-Site Plant

3.3.1 The number and type of plant that would be operating for the duration of Phase 9 at Ladycross Plantation are provided in **Table 3-2**. An emergency 250 kVA emergency back-up (welfare) generator will be on site in Phase 9 for emergency use. Whilst this generator will be routinely tested and maintained, as it will be used only in exceptional circumstances, emissions from this source were not included in this assessment. In the table below, the generator for powering the siltbuster is noted as being in use for the full duration of Phase 9; however, this generator would be used periodically and only when required, and therefore the assessment is considered to be conservative.

Table 3-2 Plant Required During Phase 9

Task	Plant Type	Duration of Phase 9 That Plant Will Be Used*
General site use	12T Excavator	11.4%
	20T Dumper	11.4%
	Telehandler	37.5%
	Road Sweeper	37.5%
	45ft Mobile Elevated Working Platform (MEWP)	12.5%
Construction and use of Adit connection to the MTS shaft	All plant anticipated to run on electric motors, therefore there are no associated emissions.	
Tunnel boring support works	All plant anticipated to run on electric motors, therefore there are no associated emissions.	
Installation of service trenches and walkways	Tracked Excavator 20T	1.1%
	Roller Vibrator	1.1%
	Dumper Truck 20T	1.1%
	Telehandler 5T	1.1%
	Tracked Excavator 20T	1.1%
	Roller Vibrator	1.1%
	Dumper Truck 20T	1.1%
Operation of grout plant	All plant anticipated to run on electric motors, therefore there are no associated emissions.	

Task	Plant Type	Duration of Phase 9 That Plant Will Be Used*
Surface Works – Blacktop Installation	Dozer	1.1%
	Roller Vibrator	1.1%
	Asphalt Paver	1.1%
	Asphalt Roller	1.1%
	Tracked Excavator 20T	1.1%
General equipment	4 kVA Mobile generator (workshop)	100%
	60 kVA generator (Back-up-Siltbuster) (Rain Dependant)	100%
	4" Supersilent Pump x3 (Rain dependent)	75%
	Towable Jet Wash	37.5%
	Towable Water Bowser 7000L	37.5%
	Wheelwash	37.5%
*This takes into account the utilisation of each piece of plant throughout the 132 week construction period and the expected on-time of the plant.		

4 Predicted Particulate Emissions from Plant and HGVs during Phase 9

4.1 Methodology

4.1.1 Particulate matter will be generated by the combustion of fuel and brake and tyre wear associated with the following activities during Phase 9:

- Transportation of workforce to site;
- HGV deliveries and movements; and
- The operation of on-site plant (referred to as Non-Road Mobile Machinery (NRMM)) and generators.

4.1.2 Data on the above activities are provided where the required information is known. Where data were not available, information used in the assessments undertaken for the Environmental Statement are used, which included the average trip length and speeds. This is considered to be a reasonable worst-case scenario.

4.1.3 The quantification of emissions from road traffic was undertaken using the latest Defra Emission Factor Toolkit (version 12.0.1)[6]. The Emission Factor Toolkit is regularly updated to reflect the latest vehicle technologies and fleet compositions, and is the primary method of deriving emissions from road transport in the UK. The standard UK fleet composition for 2024, built into the Emission Factor Toolkit, was utilised.

[6] *Defra (2023). Emission Factor Toolkit v12.0.1.*

4.1.4 The Emission Factor Toolkit does not provide specific emission factors for NRMM. As such, emissions of NRMM were calculated using the methodology detailed in European Environment Agency (EEA) Guidance[7]. This document details specific emission factors for NRMM, based on the power rating of the plant and the various emission stages, which correspond to the emission standards set out in relevant EU Directives.

4.1.5 The guidance provides three tiers of emission factors; the appropriate tier for use is dependent on the level of information available on the types of plant. As specific information on the make and model of plant used at Ladycross Plantation were provided by STRABAG, Tier 3 emission factors were used.

4.1.6 Emissions associated with generators were derived using the Tier 1 approach in EEA Guidance[8]. Fuel consumption was derived using the electrical power of the plant, the electrical efficiency, the anticipated load and hours of use per day as provided by STRABAG. Emission factors were obtained from the EEA Guidance.

4.2 Assumptions

4.2.1 The following assumptions were made in the assessment of particulate emissions from NRMM and vehicle movements:

- NRMM was assumed to be in operation for 75% of the working day, with more specialist items of plant (the MEWP) assumed to be in operation for 25% of the working day;
- Phase 9 will commence in 2024, EFT[6] emission factors for 2024 were therefore used. Phase 9 will end when the TBM reaches Woodsmith Mine, which is estimated to be in 2026. PM emissions are predicted to decrease into the future, therefore using 2024 emissions factors for all Phase 9 works provides a conservative assessment;
- Some activities will be undertaken during a 12-hour working day, with others undertaken 24/7. This has been reflected within the calculations;
- All generators were assumed to operate at 40% efficiency;
- The duration of Phase 9 is assumed to be 132 weeks in total, with all Sundays worked. Installation of service trenches and walkways and surface works (blacktop installation) will be completed after the first four weeks. Construction and use of Adit connection to the MTS shaft will take 11 weeks (starting on Week 15 of the programme) and all activities will be underground. This will then be followed by 107 weeks (starting Week 26 of the programme) of tunnel boring support works, in addition to 24/7 operation of grout plant; and
- HGV deliveries are restricted to 10% of weekday volumes on Sundays (as per the CTMP). The previous, and more conservative assumption, of 10% of a maximum 56 two-way HGV daily trips was retained to provide a worst-case assessment.

4.2.2 Data were provided by STRABAG on the expected loading for all items of plant during their use, and this information was applied in the assessment.

[7] EMEP/EEA (2023) *EMEP/EEA Air Pollutant Emission Inventory Guidebook 2023 – 1.A.4 Non road mobile machinery 2023*
[8] EMEP/EEA (2023) *EMEP/EEA Air Pollutant Emission Inventory Guidebook 2023 – 1.A.4 Small combustion 2023*

4.2.3 Average HGV speeds were obtained from GIS smartphone data on the road links that comprise the haul route, and average speeds of cars were obtained from route mapping and estimated distance over time.

4.3 Emissions from Construction Phase Road Traffic Movements

4.3.1 The quantification of particulate emissions generated by construction-phase traffic movements was undertaken using the following input data:

- Number of daily HGV and car movements;
- Average trip lengths (km);
- Average speed vehicles will be travelling; and
- Emission factors for each vehicle type.

4.3.2 Input and output data from the Emission Factor Toolkit are detailed in **Appendix A3**.

4.4 Emissions from the Operation of On-Site NRMM and Generators

4.4.1 The input data used to calculate particulate (PM_{10}) emissions from NRMM and generators are detailed in **Appendix A4** and **Appendix A5**. The calculated particulate emissions from NRMM and generators are detailed in **Table 4-1**.

Table 4-1 Total PM_{10} Emissions from NRMM during Phase 9

Task	Plant Type	Total PM_{10} Emission (tonnes)
General site use	12T Excavator	0.0010
	20T Dumper	0.0141
	Telehandler	0.0913
	Road Sweeper	0.0263
	45ft MEWP	0.0059
Installation of service trenches and walkways	Tracked Excavator 20T	0.0067
	Roller Vibrator	0.0007
	Dumper Truck 20T	0.0034
	Telehandler 5T	0.0028
	Tracked Excavator 20T	0.0019
	Roller Vibrator	0.0007
	Dumper Truck 20T	0.0028
Surface Works - Blacktop Installation	Dozer	0.0002
	Roller Vibrator	0.0007
	Asphalt Paver	0.0020
	Asphalt Roller	0.0018
	Tracked Excavator 20T	0.0048
General equipment	4 kVA mobile generator (workshop)	0.0013

Task	Plant Type	Total PM_{10} Emission (tonnes)
	60 kVA generator (Back-up-Siltbuster) (Rain Dependant)	0.0201
	4" Supersilent Pump x3	0.1568
	Towable Jet Wash	0.0029
	Towable Water Bowser 7000L	0.0882
	Wheelwash	0.0269

4.5 Total Particulate Emissions Generated During Phase 9

4.5.1 The total particulate predicted to be generated during Phase 9 as a result of emissions from construction-phase traffic, NRMM and generators is detailed in **Table 4-2**.

Table 4-2 Total PM Emissions from Construction Traffic, NRMM and Generators

Source	Total PM Emission (tonnes)
Construction Traffic	0.312
NRMM and Generators	0.463
TOTAL	**0.775**

4.5.2 The total PM_{10} emission in 2021 within the former Scarborough Borough Council (SBC) area was derived from National Atmospheric Emission Inventory (NAEI) mapping[9], as detailed in **Figure 2**.

4.5.3 The total annual PM_{10} emission within the whole former SBC area of jurisdiction was 245.34 tonnes in 2021. Particulate emissions generated during Phase 9 will therefore contribute 0.32% of the total emissions within this former local authority area. It should be noted that the total duration Phase 9 is 132 weeks, therefore the annual contribution of Phase 9 as a proportion of the total emissions within this former local authority area would be less than 0.32%.

[9] National Atmospheric Emission Inventory (2021) Emission Maps for the UK http://naei.defra.gov.uk/data/map-uk-das?pollutant_id=24&emiss_maps_submit=naei-20160526090831

5 Mitigation Measures

5.1 Construction Dust and NRMM Mitigation Measures

5.1.1 Details of mitigation measures to minimise construction phase dust emissions are included in the CEMP.

5.1.2 All NRMM and plant will be well maintained. If any emissions of dark smoke occur then the relevant machinery will stop immediately and any problem rectified. In addition, the following controls will apply to NRMM:

- All NRMM should use fuel equivalent to ultralow sulphur diesel (fuel meeting the specification within EN590:2004);
- All NRMM will comply with the appropriate NRMM emission standards;
- All NRMM will be fitted with Diesel Particulate Filters (DPF) conforming to defined and demonstrated filtration efficiency (load/duty cycle permitting);
- The ongoing conformity of plant retrofitted with DPF, to a defined performance standard, will be ensured through a programme of onsite checks; and,
- Fuel conservation measures will be implemented, including instructions to:
  - throttle down or switch off idle construction equipment;
  - switch off the engines of trucks while they are waiting to access the site and while they are being loaded or unloaded; and,
  - ensure equipment is properly maintained to ensure efficient fuel consumption.

5.1.3 The vehicle fleet accessing Ladycross Plantation will be fitted with DPFs, which will control particle emissions[10].

[10] DPFs are commonly fitted to cars and commercial vehicles to reduce particulate emissions and ensure compliance with the latest Euro standards. It is an offence under the Road Vehicles (Construction and Use) Regulations (1986) to use a vehicle that has had the DPF removed.

Figures

Key:

Location of Dust Monitor

Title
Ladycross Plantation Dust Monitoring Locations

Project
PB1110 Woodsmith Project

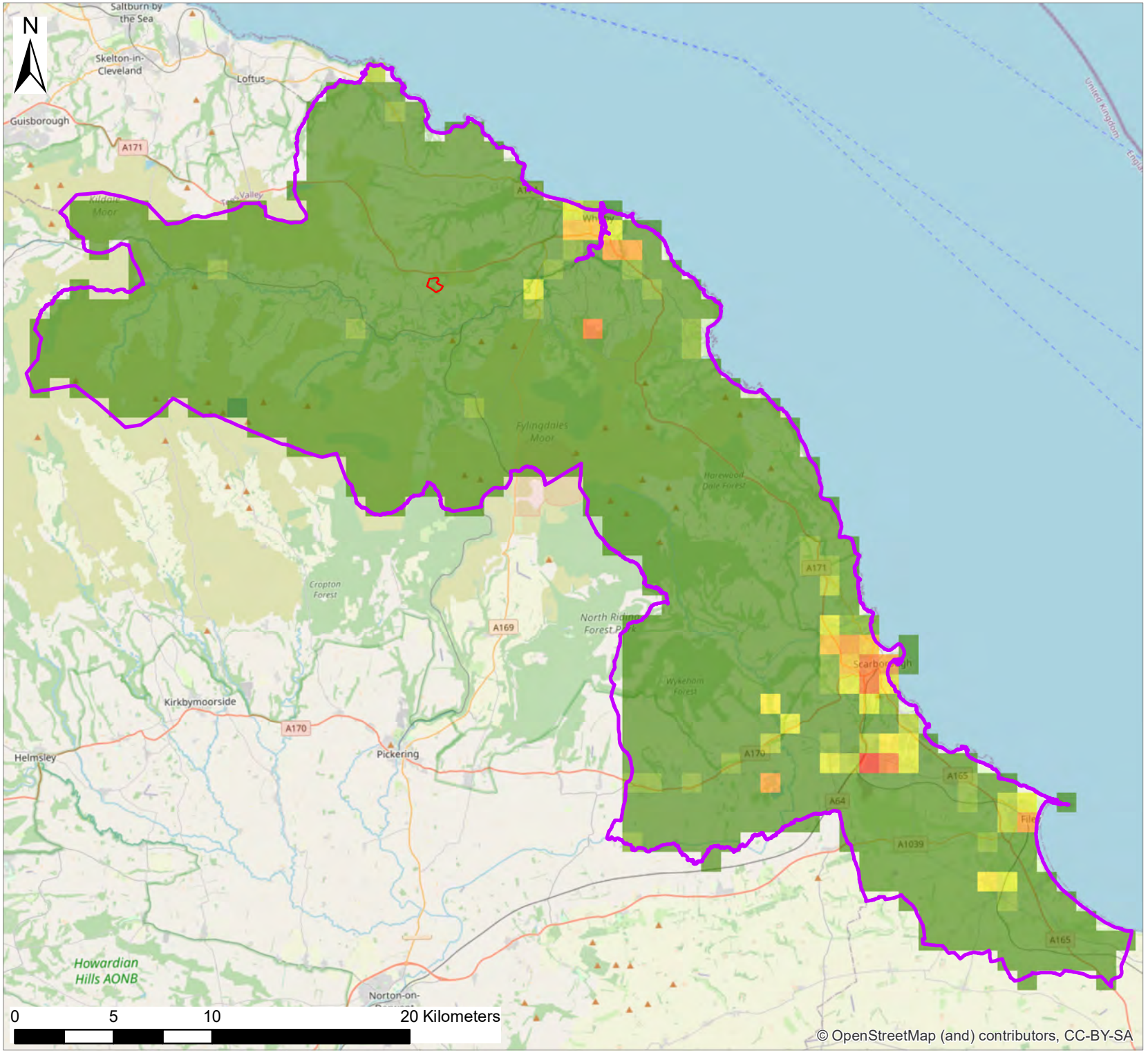
Client
STRABAG AG

Date	*Scale*
12/07/2022	1:3300

Figure
Figure 1

Checked by	*Number*
JD	1

Royal HaskoningDHV
Enhancing Society Together



Key:

- Ladycross Plantation
- Scarborough Borough Council Area

Tonnes PM_{10}/km^2 (2021)

- <0.01
- 0.01 - 0.58
- 0.59 - 1.35
- 1.36 - 1.93
- 1.94 - 2.9
- 2.91 - 3.67
- 3.68 - 4.25
- 4.26 - 6.19
- 6.2 - 18.56
- 18.57 - 49.31

Title
2021 NAEI PM_{10} Emissions Mapping

Project
PB1110 Woodsmith Project

Client
STRABAG AG

Date	*Scale*
12/07/2023	1:265000

Figure
Figure 2

Checked by	*Number*
JD	1

Royal HaskoningDHV
Enhancing Society Together

Appendix A

A1 Definitions of Dust and Fine Particulate Matter

Atmospheric particles are generally categorised by size fraction and by their source, and are usually measured by mass concentration (although particle number and 'black carbon' techniques are available). The generic term of 'dust' and the two size fractions most commonly used to consider human health environmental effects are defined below.

'Dust' is considered to be the mass of solid particles that are suspended in air or have settled out onto a surface after having been suspended in air. In IAQM Guidance[11] and within this document, the term 'dust' has been used to include the particles that give rise to soiling, and to potential human health and ecological effects. BS 6069:1993 provides a definition of dust as particles up to 75 µm in diameter.

The smaller size fractions considered in the UK Local Air Quality Management regime are defined in Regulations[12] as follows:

- "PM_{10}" means particulate matter which passes through a size-selective inlet as defined in the reference method for the sampling and measurement of PM_{10}, EN 12341, with a 50% efficiency cut-off at 10 µm aerodynamic diameter; and,
- "$PM_{2.5}$" means particulate matter which passes through a size-selective inlet as defined in the reference method for the sampling and measurement of $PM_{2.5}$, EN 14907, with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter.

The term 'aerodynamic diameter' is a reference to the terminal velocity in air of a spherical particle of unit density, therefore this is a way of standardising the range of irregular airborne particle loading for measurement and standard-setting.

Particulate matter is generally described by source as being either 'primary' or 'secondary'. Primary particles such as carbon particles from fuel combustion, sea salt and mineral particles derived from construction activities are released directly into the air, whereas secondary particles are formed in the atmosphere by chemical reactions that lead to the formation of low volatility compounds that condense into particles.

The main sources of primary particulate are road transport (combustion emissions, brake and tyre wear and re-entrainment of dust from road surfaces); stationary combustion (such as domestic coal burning); and industrial processes (production of metals, cement, lime, coke and chemicals, bulk handling of dusty materials, construction, mining and quarrying).

Secondary particles are less easy to ascribe to their original sources. They are comprised mainly of ammonium sulphate and nitrate, originating from the oxidation of sulphur and nitrogen oxides in the atmosphere to acids, which are then neutralised by atmospheric ammonia derived mainly from agricultural sources. The chemical processes involved in their formation are relatively slow and their persistence in the atmosphere is prolonged. Thus, secondary particles are distributed more evenly

[11] Institute of Air Quality Management (2024). Guidance on the assessment of dust from demolition and construction. January 2024 (Version 2.2)

[12] The Air Quality Standards Regulations 2010 (SI 2010 No.1001)

throughout the air with fewer differences between urban and rural areas. They can also travel large distances, resulting in the transport of particles across national boundaries (AQEG, 2005)[13].

[13] Air Quality Expert Group (AQEG), (2005). Particulate Matter in the United Kingdom. Defra, London

A2 Background Particulate Matter Concentrations

Table A2 2024 Background Particulate Matter Concentrations

Grid Square (X, Y)	PM_{10} Background Concentration ($\mu g.m^{-3}$)	$PM_{2.5}$ Background Concentration ($\mu g.m^{-3}$)
481500, 507500	9.45	5.78
481500, 508500	9.20	5.74

A3 Inputs and Outputs of the Emission Factor Toolkit

Table A3 Input Data into the Emission Factor Toolkit

Vehicle Type	Number of Vehicles During Phase 9	Number of Vehicles per Day (Averaged over Phase 9)	Speed (kph)	Trip Length (km)
HGV	29,304	32	69	46
Cars	129,360	140	62	45.5

Table A4 Output from the Emission Factor Toolkit

Vehicle Type	Emissions of PM_{10} over Phase 9 (kg)
HGV	137.29
Cars	174.36
Total	**311.66**

A4 Calculation of Emissions from NRMM

The European Monitoring and Evaluation Programme (EMEP)/European Environment Agency (EEA) Emission Inventory Guidebook 2023[14] provides the following equation to calculate emissions from NRMM:

$$E = N \times HRS \times P \times (1+DFA) \times LFA \times EF_{(base)}$$

Where:

E = mass of emissions generated during Phase
N = number of units
HRS = hours of use over the Phase
P = engine size (kW)
DFA = deterioration factor adjustment
LFA = load factor adjustment
$EF_{(base)}$ = base emission factor (g/kWh).

The average kilowatt (kW) power ratings for the proposed NRMM are provided in **Table A5**.

Table A5 Power Ratings of Required Plant During Phase 9 at Ladycross Plantation

Task	Plant Type	Power in kW
General site use	12T Excavator	74
	20T Dumper	152
	Telehandler	74.5
	Road Sweeper	172
	45ft MEWP	36
Installation of service trenches and walkways	Tracked Excavator 20T	128.4
	Roller Vibrator	24.3
	Dumper Truck 20T	152
	Telehandler 5T	74.5
	Tracked Excavator 20T	128.4
	Roller Vibrator	24.3
	Dumper Truck 20T	152
Surface Works – Blacktop Installation	Dozer	161
	Roller Vibrator	24.3
	Asphalt Paver	55
	Asphalt Roller	24.3
	Tracked Excavator 20T	128.4
General equipment	4" Supersilent Pump x3 (Rain Dependent)	16
	Towable Jet Wash	0.59
	Towable Water Bowser 7000L	18
	Wheelwash	22

[14] EMEP/EEA (2023) *EMEP/EEA Air Pollutant Emission Inventory Guidebook 2023 – 1.A.4 Non road mobile machinery 2023*

The input data used to calculate emissions from NRMM are detailed in **Table A6**.

Table A6 Input Data Used to Calculate Particulate Emissions from NRMM

Plant	kW	Hours of Use During Phase 9*	Deterioration Factor	Load Factor	Emission Factor Stage	Emission Factor (g/kWh)
12T Excavator	74	2,520	0.473	25%	Stage 5	0.015
20T Dumper	152	2,520	0.473	25%	Stage 3A	0.1
Telehandler	74.5	8,316	0.473	50%	Stage 3A	0.2
Road Sweeper	172	8,316	0.473	50%	Stage 4	0.025
45ft MEWP	36	2,772	0.473	10%	Stage 3A	0.4
Tracked Excavator 20T	128.4	252	0.473	70%	Stage 3A	0.2
Roller Vibrator	24.3	252	0.473	20%	Stage 3A	0.4
Dumper Truck 20T	152	252	0.473	60%	Stage 3A	0.1
Telehandler 5T	74.5	252	0.473	50%	Stage 3A	0.2
Tracked Excavator 20T	128.4	252	0.473	20%	Stage 3A	0.2
Roller Vibrator	24.3	252	0.473	20%	Stage 3A	0.4
Dumper Truck 20T	152	252	0.473	50%	Stage 3A	0.1
Dozer	161	252	0.473	20%	Stage 5	0.015
Roller Vibrator	24.3	252	0.473	20%	Stage 3A	0.4
Asphalt Paver	55	252	0.473	50%	Stage 3A	0.2
Asphalt Roller	24.3	252	0.473	50%	Stage 3A	0.4
Tracked Excavator 20T	128.4	252	0.473	50%	Stage 3A	0.2
4" Supersilent Pump x3	16	16,632	0.473	25%	Stage 3A	1.6
Towable Jet Wash	0.59	8,316	0.473	25%	Stage 3A	1.6
Towable Water Bowser 7000L	18	8,316	0.473	25%	Stage 3A	1.6
Wheelwash	22	16,632	0.473	25%	Stage 3A	0.4
*Taking in to account on-time						

A5 Calculation of Emissions from Generators

The EMEP/EEA Emission Inventory Guidebook 2023[15] provides the following equation to calculate emissions from small combustion sources such as generators:

$$E_{pollutant} = AR_{fuelconsumption} \times EF_{pollutant}$$

Where:

$E_{pollutant}$ = the emission of the specified pollutant (g/h)
$AR_{fuelconsumption}$ = the activity rate for fuel consumption (GJ/h)
$EF_{pollutant}$ = the emission factor for the pollutant (g/GJ)

The fuel consumption (AR) of each generator was derived using the power rating of the generators, the load, the electrical efficiency and the utilisation percentage. The EF was taken from EMEP/EEA Guidance. The inputs are detailed in **Table A7**.

Table A7 Input Data Used to Calculate Particulate Emissions from Generators

Activity	Generator	Power (kVA)	Power (kW*)	Power Load (%)	Percentage of Phase 9 Used (%)	Efficiency (%)	AR Fuel Consumption ($GJ.h^{-1}$)	EF (Emission Factor) PM_{10} (g/GJ)**
General Site Activities	60 kVA generator (back-up Siltbuster)	60	48	10	100	40%	0.04	21
	4 kVA mobile generator (workshop)	4	3.2	10	100	40%	0.003	21
*Based on kVA to kW conversion of 0.8 **The emission factor for liquid fuel was used								

[15] *EMEP/EEA (2023) EMEP/EEA Air Pollutant Emission Inventory Guidebook 2023 – 1.A.4 Small combustion 2023*